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THE PRACTITIONER:

A Monthly Journal

OF

THERAPEUTICS.

EDITED BY

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THE PRACTITIONER.

JULY, 1870.

Original Communications.

ON QUININE AND ALCOHOL IN PARALYTIC FEVER.

BY C. BINZ, M.D.

Professor at the University of Bonn.

As far as I know, Sir B. Brodie was the first who (1837) made the observation, that after the demolition of the spinal marrow the temperature of the body rises to an extremely high degree in a few hours.

Since then the same observation has been made several times both in England and in Germany (cf. H. Weber, "Transactions of the Clinical Society," London, May 22, 1868), and it has been proved that this case of high temperature of the blood always and especially occurs during a high temperature of the outer air.

In the year 1866, Tscheschischin, a pupil of the Physiological Institution of Berlin, tried to produce the same effect on an animal. It was then shown that after an artificial division of the spinal marrow the warmth of the body first fell in a considerable degree, which could be prevented only by enclosing the body in bad conductors of heat, as cotton wool, &c., but that afterwards the temperature rose to the same height, as previously seen in human bodies. It was clear that, in order to produce the above-mentioned effect, a too great cooling of the skin must be avoided. The division of the cord, in not too low a spot,

causes a paralysis of all vascular nerves, and by that means a considerable augmentation of the waste of heat on all peripheric parts. On the second hand, the same paralysis causes an easier intercommunication of the liquids inside and outside the vessels in the interior, and consequently a greater development of heat. As this occurs, when the centre of the nervous system is separated from the periphery, it must be admitted that there are some parts within the brain which have a moderating influence on the production of warmth in the rest of the body.

The lowering of the temperature in fever, which has been observed with the help of the thermometer for the last eight or ten years in Germany, was often ascribed to an irritating effect of the different drugs on this moderating centre. Even if other factors were allowed to have been active in the same direction, as, for instance, the pressure in the arterial system, the influence of the nerves seemed to be of a preponderating importance. The antipyretic action of quinine was especially attributed to this cause.

In my former investigations I have proved quinine to possess a specific chemical action on organic mixtures, such as blood and matter. All processes of fermentation (in non-acid liquids) and of putrefaction are powerfully inhibited by it. The development of active oxygen (ozone) is retarded, or possibly prevented, and the same effect may be produced on a living animal without endangering its life. If we admit that the laws of nature are the same within the animal body as without, we must of necessity allow that quinine is an antipyretic, on account of its lowering, in a direct manner, the processes of oxidation within the vessels and tissues.

But as it is well known that different effects in the animal body may be produced by different means at the same time, the possibility of an immediate action of quinine on the supposed moderating centre is nevertheless admissible.

Pharmacological experiment must be able to decide this. For that purpose I chose large, strong dogs, as they lose a less degree of warmth in the first stage of the paralysis of the vessels. Thickness of the hair facilitates the experiment. The spinal marrow was cut between the sixth and seventh vertebræ, whilst

the animal was in a good narcosis of morphia and chloroform. Having put the animal into a place where the temperature could be kept at the same height, the heat of the blood was taken in the rectum every quarter of an hour.

After having twice convinced myself of the correctness of the details which Naunyn and Quincke have published on the same subject (cf. "Archiv für Anatomie und Physiologie," von Reichert und Dubois, 1869, p. 174), I employed, together with Mr. C. Bouvier, a series of experiments to prove the effect of quinine under the above circumstances. But before I come to a communication of the pharmaco-dynamic results, I think it advisable to give a short statement of a curve as it resulted from the normal experiment.

A strong terrier, after the operation, which succeeded without any considerable loss of blood, is put into a box open on either side. This is placed near a moderately warm stove. The animal is covered with cotton wool. Complete paralysis of all muscles except in head, and neck, and the diaphragm, which works deeply and regularly. The temperature of the animal before the operation was 38·6° C., equal to 101½° Fahrenheit. The dog was put into the box at 10 h. 15 min. Every quarter of an hour the thermometer is introduced into the anus.

Hour.	Temperature of the Blood.	Respiration.	Temperature of the Box.	Notes.
10.30	38·2	16	18	
10.45	38·2	16	19	
11	38·2	16	19	
11.15	38·1	20	19	6 ounces of tepid milk injected into the stomach.
11.30	38·0	20	21	
11.45	38·1	20	21	
12	38·1	20	22	
12.15	38·3	20	22	
12.30	38·4	20	23	
12.45	38·4	20	24	
1	38·7	20	25	
1.15	38·7	20	25	
1.30	39·4	20	25	
1.45	39·7	20	25	
2	40·0	20	24	Quiet as hitherto.
2.15	40·3	20	24	The effect of the morphia
2.30	40·6	28	24	seems to last.
2.45	41·1	40	25	
3	41·4	—	25	

A few minutes after 3 o'clock short convulsions and death. The examination showed complete and plain division of the spinal marrow between the 6th and 7th vertebræ of the neck.

The maximum thermometer rose, after death, from 41·4° to 42·3° (106° and 108° Fahrenheit).

The application of strong, but not toxic, doses of quinine, under such circumstances, proved that *the separation of the moderating centre of warmth from the whole frame does not prevent at all the antipyretic power of quinine declaring itself in a direct and active manner.* Only if the conditions of the fever are too favourably constituted, the effect of quinine fails thoroughly. Instead of a direct decrease, or at least an applanation of the curve, no effect, or only a slight stoppage, is noticeable.

In at least the same way as quinine, alcohol acts, even when the moderating centre of warmth is separated from the periphery.[1] It is proved by former investigations that alcohol in febrile and non-febrile bodies is generally to be regarded as an antipyretic. We know that alcohol irritates the brain, at least at the commencement of its introduction into the blood. Nothing seems to be more obvious than that this irritation takes place in the above-named part of the brain likewise. The experiment, made with all due precaution, showed in this case, as in many others, that the fact did not answer to the seemingly logical anticipations. *The antipyretic effect of alcohol is also independent of an irritation of the moderating centre.*

One point must not be overlooked which clearly proves the chemical connection of both antipyretics with the blood and the tissues. It is the altering of the post-mortal temperature. By a great many observations it is established that in cases of previous fever—to some extent perhaps in all cases—the heat of the blood does not cease with the beating of the heart, but that, on the contrary, it rises for some hours afterwards far beyond the ordinary fever height. Naunyn and Quincke observed it in their fifteen cases every time they took notice of it; and I, too, in my normal experiments, remarked the same, once not only as before stated to 0·9° C., but as far as 1·5° C.

1 The description of some of the other eleven curves would exceed the space of this periodical. They will be published in Virchow's "Archiv," July and August 1870.

The generally received explanation of this fact is this:—During lifetime a great portion of the heat produced in the blood by the process of oxidation radiates from the continually replenished vessels of the whole skin and of the lungs. Circulation ceases at the moment of death, and with it the possibility of this considerable cooling. In the interior of all tissues, the chemical relations are going on, for a certain time, as before death. The effect of this preponderates for a few hours over the non-reception of external oxygen and of the small escape of warmth through the bloodless skin, until at last the want of new oxygen puts an end to a former source of the increase.

In both series of experiments it appeared that the post-mortal temperature was always lowered. With quinine the raising was only 0·4°—0·5° C. to 0·9°—1·5° in normal cases, and with alcohol there was no post-mortal raising whatever, although all external conditions were very favourable.

It perfectly coincides with this, that the putrefaction of the corpses which, according to Naunyn and Quincke, takes place after the said operation in an extremely quick and decided manner, only manifested itself slowly and indistinctly.

Now, the common factors to which the effect of alcohol and quinine usually is referred can have had no influence in either of these cases. The nerves can only act during life; and the heart, and with it every pressure in the vessels, stops in warm-blooded animals very shortly after death. From a purely logical point of view it must also be obvious:—The immediate chemical activity, as is now unanimously admitted, forms the principal source of bodily heat; the contrary effect must be produced by an immediate lowering of that activity.

I should like to mention an hypothesis as explanation of the non-acting of both antipyretics in those cases where the fever curve was in too rapid an increase. Of alcohol we know that it is very quickly consumed in the body, and especially when the process of oxidation is very energetic. After having given a terrier with paralytic fever ten ounces of alcohol (98 per cent.) in two hours, I endeavoured to find alcohol in the bladder, which had not been emptied during all the time. The very exact Geisler "vaporimeter," which indicates as far as 0·1 volume per cent., showed nothing. After distillation, the well-

known test with bichromate of potash indicated only a *slight* trace, as did the test made with alkali and iodine, lately published by Lieben. The stomach of the animal contained no alcohol.

It may be the same with quinine. Hitherto it has been assumed that at least five-sixths pass without decomposition through the blood and the kidneys. Kerner in his late paper (Pflüger's Archiv für Physiologie, Bd. iii. p. 93—165) proves that a part of the quinine reappears in an oxidated state, as *Dihydroxylquinine*. This substance has almost all the chemical reactions of the original preparation, but is perfectly inactive in physiological effect.[1] Externally of the animal body, the dihydroxylquinine can be produced by the action of the strongly oxidating permanganate of potash on quinine. There is no reason to prevent us from assuming that the quantity of dihydroxylquinine found in persons in a state of high fever will, by further clinical researches, be found great enough to explain the non-acting of the prescribed medicament. Of course it must be ascertained that the quinine has been absorbed by the stomach, *which does not always take place* when the sulphate without additional acid is employed, or when by reason of the fever, or by other local derangements, the digestive functions are out of order.

One possibility we must still take into consideration. Quinine and alcohol might act as irritants on the peripheric parts of the spinal marrow, and thus cause a contraction of the paralysed vessels. Our experiments do not lead us to such a conclusion. All that we otherwise know on the action of both substances on this nervous centre is only in favour of the reverse.

Pulse and respiration must also be taken into account. In our experiments we found nothing tending in that direction. Both often remain unchanged in fevers, as we can easily prove, although the antipyretic effect has shown itself for some

[1] It may here be remarked, that for Kerner it was requisite to re-examine, on this occasion, all I had previously published (cf. *Lancet*, 1868, p. 415, and the *Practitioner*, 1869, p. 303) about the action of quinine on putrefaction, fermentation, white blood-cells, &c., and that he fully confirms my statements, as Martin had done before him (cf. *Practitioner*, 1869, p. 107) on one chief point, the formation of pus in the mesentery of frogs (Cohnheim) and its prevention by quinine.

time. More, and especially manometric, experiments are yet needed to decide this point.

In conclusion, the question might arise whether in those cases that have been known since 1837 the results of our experiments might be therapeutically applied. As far as I am aware, these unfortunate patients have been allowed to die without one of the most torturing symptoms of their injuries, the intense fever, being alleviated. I can but point out what may possibly be done in such cases. Only direct observation is able to ascertain what is to be realized in the *human* body. If I am allowed to offer any advice for such instances, it would be this,—that a lasting success is solely to be obtained if the remedy is applied in a large dose at the commencement of the raising of temperature; and further, that the patient is kept in a cool atmosphere, so as to second the internal cooling action of quinine or alcohol. With the latter plan I succeeded twice most satisfactorily in lengthening the lives of the injured animals, which remained in an entirely quiet and painless state.

ON THE TREATMENT OF DISTENSION OF THE FRONTAL SINUS FROM PENT-UP SECRETION OR PUS, WITH TWO CASES, AND ILLUSTRATIONS.

BY GEORGE LAWSON,

Surgeon to the Royal London Ophthalmic Hospital, Moorfields, and Assistant Surgeon to the Middlesex Hospital.

The two following cases are well-marked examples of distension of the frontal sinus, and of the great deformity from displacement of the eye which may be caused by this affection. The most efficient treatment consists in first establishing and afterwards maintaining a communication between the interior of the cyst and the cavity of the nose, so that by continued drainage and the application of local astringents the walls of the cyst may gradually contract. With the diminution of the cavity, the eye steadily recedes towards its normal position; and although in severe and long-standing cases the eye is never completely restored to its proper level within the orbit, yet the improvement is always sufficient to satisfy the patient, independently of the mental relief gained by the removal of a tumour which has long been a source of anxiety.

The operation which I performed in each of the cases I have to relate was the following, the description of which I have taken from my manual on "Diseases and Injuries of the Eye."

A single curved incision parallel with the fold above the lid is to be made over the most prominent part of the tumour, and having by a little dissection exposed its surface, the scalpel should be plunged into it, and an opening made to the extent of the incision. The index finger of the right hand is now to be pushed into the sinus through the wound to ascertain the size of the cavity, and if there is any necrosed or carious bone. Whilst thus exploring the sinus, the little finger of the left

hand should be passed up the corresponding nostril, and an endeavour made to find out the spot at which the tip of the finger in the sinus will approximate most closely the end of the one in the nose. After a little search it will be found that at one part the fingers will almost meet, there being only a thin plate of bone between them. Having gained this information, the finger in the frontal sinus is to be withdrawn, but that in the nostril is to be retained *in situ* to act as a guide to the gouge or elevator, which is to be passed into the sinus and made to force a passage into the nose through the lamina of bone on which the tip of the little finger is resting. A communication between the frontal sinus and the nose having been thus established, an india-rubber drainage tube with holes cut at short distances is to be introduced, one extremity of which is to be afterwards fastened on the forehead, whilst the other end protrudes slightly from the nostril, as in Fig. 3.

The easiest way of introducing the drainage tube is to pass a probe with an eye up the nostril and out of the wound, and having fastened the tube to it by means of a piece of string, to draw it back again through the nose.

The object of the drainage tube is to keep the channel between the two cavities from closing, and to enable the attendant to wash out the frontal sinus at least twice a day with some astringent and disinfectant solution.

Case I.—John C——, aged 58, came under my care at the Royal London Ophthalmic Hospital on March 12, 1869, on account of the large tumour at the inner side of the orbit which is well shown in the woodcut (Fig. 1), drawn from a photograph before any treatment was commenced.

History.—The patient dates his present affection from a kick he received on the left eyebrow from a horse when four years old, fifty-four years ago. There is still remaining as the result of the injury a depression of the bone over the left eyebrow, and a scar on the inner side of the nose. The left eye is considerably displaced by the tumour; it is half an inch further from the nose, and nearly an inch lower down in the face than its fellow of the opposite side. The eye is projected outwards, and the patient is unable by any effort to draw it inwards.

The inner half of the field of vision is lost, but in the outer half he can count fingers, although he is unable to read any sized type. On the left side of the bridge of the nose there is a smooth, round, elastic swelling about the size of half a large walnut protruding from the inner side of the orbit. It varies in size, being much smaller when he gets up in the morning, and larger when he goes to bed at night. There is no pain in the tumour, nor in the scar of the old injury.

Fig. 1.

On the day of the patient's admission into the hospital I performed the operation I have described, and passed an india-rubber drainage tube through the distended sinus into the left cavity of the nose and out of the corresponding nostril, as is represented in the woodcut, Fig. 3. The contents of the cyst consisted solely of a thick dark glairy fluid, evidently the pent-up accumulation of many years' secretion of the lining membrane of the frontal sinus. A very slight amount of irritation followed this operation, and the patient in a few days expressed himself greatly relieved of the sense of weight which had lately oppressed his brow. A free discharge drained through the tube, which was shifted twice a day, and previous to each shifting the cavity of the cyst was thoroughly cleansed with a solution of carbolic acid, ℥iv ad aquæ ℥j, which was squirted into the sinus through the drainage tube.

Gradually the discharge diminished in quantity; and as the cyst walls contracted, the eye regained to a great extent its proper position within the orbit. The tube was worn for nearly eight months, when, as all discharge had ceased, it was withdrawn. After the removal of the drainage tube there was left a fistulous opening at the inner angle of the orbit, which may possibly require a slight operation to effect a permanent closure.

Case II.—Alice S——, aged 21, came under my care at the Ophthalmic Hospital, on April 6th, 1869, on account of a tumour on the inner side of the orbit which projected the eye downwards and outwards, as is correctly represented in the woodcut (Fig. 2), taken from a photograph.

Fig. 2.

History.—The girl states that about six years ago she noticed a swelling at the inner side of the left orbit, close to the bridge of the nose; it was small and soft to the touch, and varied in size, being larger at one time than another; it gradually increased until it attained the dimensions shown in the drawing. The sight of the eye is good. She can read No. I. with ease at 12 inches, and No. XX. Snellen at 20 feet. Her mother thinks that the swelling originated in a severe attack of erysipelas which she had when she was six years old. On two occasions the tumour has been punctured, and each time a thick fluid was evacuated.

After her admission into the hospital, I performed on this patient the same operation as in the preceding case, and succeeded in introducing a drainage tube through the distended sinus, as is represented in Fig. 3. After cutting into the tumour,

Fig. 3.

my finger passed readily into a large cavity, the dilated frontal sinus, in which I detected a small portion of necrosed bone, which was, however, too firmly adherent to the living structure to be detached. The contents of the cyst consisted partly of the same dark glairy fluid as was found in the first patient, but partly also of pus, with which the dark fluid was freely streaked. It is very probable that through the free channel now established between the frontal sinus and the nose the portion of necrosed bone will escape after it has become detached.

The after-treatment consisted in daily shifting the tube, and in washing out the cyst at first with a solution of carbolic acid, ℥iv ad aquæ ℥j; and afterwards with a lotion of glycerini acidi tannici ℥j, ad aquæ ℥viij. The patient progressed most satisfactorily, and after a few weeks returned to her home, where she continued to wear the tube for nearly six months. The last account I received from her was accompanied with a photograph, which was taken just before the tube was withdrawn. She was much improved in appearance, and the eye had returned to its proper level within the orbit.

ON THE TREATMENT OF COMMENCING CHRONIC DIARRHŒA IN YOUNG CHILDREN.

BY EUSTACE SMITH, M.D.

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Chronic diarrhœa in young children, a simple functional derangement which becomes confirmed, is always a serious and often a fatal disease. It usually begins very insidiously, and not unfrequently results from a slight chill or a meal of improper food, which excites a little irritation of the stomach and bowels. This irritation, when once set up, is easily maintained by causes the same in kind, although less in degree, than those which originally provoked it, and a chronic catarrh is induced, which becomes less and less amenable to treatment the longer it continues.

A child of a year or eighteen months old is exposed to cold, and shortly afterwards the bowels become slightly relaxed. The purging is, however, neither severe nor of long continuance; it speedily ceases, and the child appears to have recovered. The bowels, however, do not return to a healthy condition. There is no diarrhœa in fact; complaints are made that the bowels are not sufficiently open. For a day or two they are not relieved at all; then, on the third day, the child has two or more large sour pasty-looking motions, more or less slimy from the mucus with which they are mingled, and passed with considerable straining efforts and much apparent discomfort. This state of things continues for weeks. The child gets a little pale, but, if able to walk, still keeps on his feet. He is occasionally sick, vomiting sour-smelling food, with sometimes a little bile, and his breath often smells sour and offensive. The appetite is all this time usually un-

impaired; he may occasionally refuse his food for a day or two, but his appetite soon returns, and with the exception of an occasional attack of diarrhœa lasting for one or two days, the bowels remain irregular, the stools, when they occur, being large, pale, pasty, and sour-smelling, consisting evidently of undigested food, mixed with a little fæcal matter and a considerable quantity of mucus. With the exception of gradual loss of flesh, colour, and spirits, there is nothing very positive in the condition of the child by which the attention can be arrested.

After some weeks, or even months, during which he has got thinner and paler, without any change in his general state, the child is seized with an attack of purging, which does not, as has been usual, pass away. On the contrary it becomes more severe, and the stools increase in number and in quantity. The child now loses flesh rapidly; he is taken altogether off his feet, and his state becomes one of great danger.

These cases are often looked upon as instances of disease of the mesenteric glands, but the most careful examination of the belly will seldom furnish any satisfactory evidence of glandular enlargement. The temperature is lower than in health, and seldom rises higher than 98° Fahr. in the rectum. There is no particular desire for drink. The child is a little restless at night; he takes his food with considerable appetite, and even sometimes with voracity: the food, however, does not nourish him, and appears hardly changed in the stools.

These cases, obstinate as they prove when not treated judiciously, will yet yield quickly to suitable measures; and unless the weakness and emaciation are very great do not as a rule present any great difficulty in their management.

The object of the present paper is to describe the method of treatment applicable to these cases during the period, often sufficiently extended, before the diarrhœa has become confirmed; when the child is becoming more and more listless and pale, is losing flesh and strength, while his motions, infrequent but copious, exhibit the characters which have been described above.

The presence of undigested food in the motions of a young child, especially if that child exhibits evident marks of deficient nutrition, is a sign that the diet is an unsuitable one and requires alteration. Whether the digestive weakness be a simple

functional derangement, or be due to the existence of organic disease, in either case our object is the same—viz. to adapt the child's diet to his powers of digestion, so that the food he swallows may afford him the nourishment of which he stands in need, and may leave as little undigested surplus as possible to excite further irritation of his alimentary canal. In such cases, however, this accurate adaptation of diet is often by no means an easy task. Articles of food on which we are accustomed to rely, and from which a healthy child derives his principal support, will here often fail us altogether. Thus, farinaceous food should be given with the utmost caution, and will seldom be found to agree except in very small quantities. Even milk, our great resource in all cases of digestive derangement in children, must be sometimes dispensed with. It is not so very uncommon to find cases where milk, whether diluted with water, or thickened with isinglass, or with farinaceous food, cannot be digested. So long as it is taken, the pale putty-like matter of which the motions consist, and which is passed in such large quantities, is evidently dependent upon the milk diet, and resists all treatment so long as that is continued. In such cases, which occur most commonly in children between one and two years of age, the milk must be replaced either wholly or partially by other foods.

Although farinaceous food is not as a rule well borne in these cases, yet Liebig's farinaceous food for infants (as prepared by Mellin, of "Liebig's Patent Concentrated Milk Company"[1]) may always be tried, and seldom disagrees even with the youngest infants. In its preparation the starch of the wheaten flour, which forms one of its constituents, is already converted in great measure into dextrine and grape sugar, so that the most important part of the work of digestion is performed before the food reaches the stomach.

Whatever be the diet adopted our object is to keep up the nutrition of the body with the smallest possible amount of irritation to the alimentary canal; and the food, whatever it may be, which will produce this result, is the food best suited to the case. Without attention to this point little good can be effected by the use of drugs alone. The successful adjustment

[1] This, the best form of Liebig's food for children with which I am acquainted, can be obtained of the manufacturer, at 16, Tichborne-street, Quadrant.

of the diet, an adjustment in which the quality and quantity of food to be allowed for each meal are accurately adapted to the powers and requirements of the patient, is a matter which can be properly learned only by experience, and which often makes large demands upon the tact, the ingenuity, and the patience of the medical attendant. This experience every one should labour to acquire, for without it success can seldom be attained in the treatment of the chronic functional derangements of young children.

In all cases, if the patient be a sucking child, he should be limited strictly to the breast; or if he have been only lately weaned, the breast should be returned to. If from any reason a return to the breast is impossible, our great trust should be placed in cow's milk, more or less copiously diluted with lime-water. With children under a year old milk is very seldom found to disagree. If the child be no more than six months old, nothing should be allowed but milk, or some preparation of milk, as milk and lime-water (equal parts), whey with cream, or milk and water thickened with isinglass,[1] or with Liebig's food for infants, in the proportion of one teaspoonful to four ounces of fluid. By using these different preparations a certain variety can be introduced into the diet, and the meals should be so regulated that the quantity taken on each occasion, and the length of the interval by which the meals are separated, may be properly proportioned to one another and to the state of the patient. The Liebig's food should be given not oftener than twice in the day; and if it excite flatulence, or if any sour smell be noticed from the breath or evacuations, the quantity of one teaspoonful should be diminished, or the food should be even discontinued altogether.

Beyond the age of six months a little weak beef or veal tea, or the yolk of one egg unboiled, may be added to the diet. The egg is best digested when beaten up with a few drops of brandy and a tablespoonful of cinnamon water, as in ordinary egg-flip. As with younger infants, the quantity of food to be given at one

[1] Isinglass is useful for its mechanical action in separating the particles of casein so as to prevent the formation in the stomach of a large dense indigestible clot. By this means the casein is finely divided, and its clots resemble more the flocculent coagulæ of breast-milk.

time must depend upon the strength of the child and the condition of his stools.

If the child be over twelve months old, very small quantities of farinaceous food may sometimes be ventured upon, and will often agree. The best form in which this can be given is well-baked wheaten flour, of which one teaspoonful is all that should be allowed at one time, prepared carefully with milk.

So long as milk is well borne the arrangement of the diet is comparatively an easy task; but in the not uncommon class of cases where milk is difficult of digestion, and can only be taken in very small quantities, a different dietary must be adopted. These cases usually occur in children of eighteen months or two years old. A good scale of diet for a child of a year and a half old, in whom this peculiarity is noticed, is the following, consisting of five small meals in the twenty-four hours :—

1*st Meal.*—One teaspoonful of Liebig's food for infants (Mellin's) dissolved in four ounces of milk and barley-water (equal parts).

2*d Meal.*—Six ounces of beef-tea, of the strength of a pound of fillet of beef to the pint.

3*d Meal.*—Six ounces of fresh whey containing a tablespoonful of cream.

4*th Meal.*—The unboiled yolk of one egg, plain, or beaten up with a tablespoonful of cinnamon water, a little white sugar, and fifteen drops of brandy.

5*th Meal.*—Same as the first.

In this dietary the first and the fifth meals contain a small quantity of milk. If that be found not to agree, the food may be dissolved in barley-water alone, or diluted with an equal quantity of veal broth, or veal broth alone may be given. In any case the quantities recommended should not be exceeded; for it is wise, at any rate at first, to be sparing rather than liberal in regulating the allowance of food. It is better that the child should be hungry than overloaded, and so long as the stools retain their pasty character it is evident that the food taken remains in great part undigested.

If the milk agree, it can be gradually increased in quantity; and as digestion improves, which it will do after a few days of this carefully regulated diet, other articles of food can be

introduced, as roast mutton underdone, and well pounded in a mortar; the flower of cauliflower well boiled in water, or stewed with gravy until very tender. In the use of farinaceous foods great caution should for some time be exercised, and they should be given sparingly until convalescence is completely established, and the stools have reassumed a perfectly healthy character.

In these cases, and indeed in all cases where a special diet is recommended for children, a dietary as given above should be written out by the medical attendant. Not only the kind of food, but the quantity to be given for each meal, and even the hour at which the meal is to be taken, should be duly set down, so that no excuse may be available for neglect or misapprehension. It cannot be too often repeated that in cases such as these it is upon the judicious arrangement of his food that the recovery of the child depends, and that where the diet is properly selected the exact medicine to be ordered becomes a matter of comparatively secondary importance. Even without the aid of drugs at all, the digestive powers would no doubt in many cases speedily right themselves under such a diet as has been sketched out above, but recovery is materially assisted by a judicious selection of remedies. It is well to commence the treatment by an aperient dose of rhubarb and soda, to clear away any indigestible food which may have remained in the bowels, after which the laxative should be followed up by a mixture containing an alkali with aromatics. It is difficult to over-estimate the value of alkaline remedies in the treatment of digestive derangements in children. In all children, in infants especially, there is a constant tendency to acid fermentation of their food. This arises partly from the nature of their diet, into which milk and farinaceous matters enter so largely; partly from the peculiar activity of their mucous glands, which pour out an alkaline secretion in such quantities. An excess of farinaceous food will therefore soon begin to ferment, and an acid to be formed which stimulates the mucous membrane to further secretion. Alkalies are therefore useful, firstly, in neutralizing the acid products of this fermentation; and, secondly, in checking the too abundant secretion from the mucous glands. Either potash or soda may be used; of the two the former is perhaps to be preferred, as being a constituent of milk, the natural diet of children, it may

be considered less as a medicine than as a food. Five to ten grains of bicarbonate of potash may then be given, combined with an aromatic, several times in the day, and it is important that the dose should be taken an hour or an hour and a half after each meal, so that any excess of acid left at the end of digestion may be at once neutralized.

If the stools are loose and are passed frequently, two or three grains of the subnitrate of bismuth may be added to each dose of the mixture, and if much straining be noticed a drop of laudanum will be a useful addition to check the abnormal briskness of peristaltic action.

It is important that the aromatic be not omitted from the prescription. This class of remedies is of very great value in all those cases of abdominal derangement where flatulence, pain, and spasm, resulting from vitiated secretions and undigested food, are present to increase the discomfort of the patient. Such dyspeptic phenomena are usually rapidly relieved by the use of these agents; and the employment of aniseed, cinnamon, caraway-seed, or even of tincture of capsicum in minute doses, will be found of material advantage in combination with the other remedies which have been enumerated.

So long as the tongue remains furred, or the motions sour-smelling, the alkali should be persisted with, and the rhubarb and soda powder can be repeated every third morning. If it be thought desirable at the same time to administer iron, the citrate of iron and ammonia, in doses of five grains, can be added to the mixture. Tincture of nux vomica is also useful in one-drop doses.

The so-called alteratives are in these cases of little value, for it is no good attempting to stimulate the functions of the liver by cholagogues. Under the use of antacids and aromatics, with an altered diet, food soon begins to be digested, and the appearance of the stools becomes more healthy. After a time, acid preparations, such as the pernitrate of iron with dilute nitric acid, may be given with cod-liver oil.

A point which must not be overlooked in these cases is attention to the action of the skin. In all abdominal derangements in children the cutaneous secretion is apt to be suppressed early, and the skin soon becomes dry, rough, and harsh. When

this is found to be the case, the child should be bathed every evening with hot water, and be then freely anointed with warm olive oil. By this means the suppleness of the skin is soon restored. Warm clothing should be worn, with flannel next to the skin; and as an additional precaution, to guard against the risk of chills, an ample flannel bandage should be applied as a protection to the belly.

ON THE USE OF ARSENIC IN IRRITATIVE DYSPEPSIA.

BY JOHN C. THOROWGOOD, M.D. LOND.

Our knowledge of the action of arsenic and its compounds, when given in considerable doses, upon the mucous surfaces of the body, would hardly lead us to expect much good from its administration as a remedy for irritative dyspepsia.

It appears, however, that arsenic has been tried in some of the forms of inveterate dyspepsia, and there is plenty of good evidence of its curative powers.

Dr. Ringer says, "There are few remedies more useful in many diseases of the stomach than arsenic;" and in irritative dyspepsia this physician recommends the administration of one drop of Fowler's arsenical solution shortly before food. Another authority, Dr. Wilson Fox, while mentioning the fact that arsenic is advised by many as a valuable drug, in curing chronic catarrh of the stomach, says that his own experience of its use has not been satisfactory, and it certainly aggravates the affection in cases to which it is not adapted. The writer of this paper is able to endorse fully the statements of both of these physicians. There are cases of irritative dyspepsia where arsenic in very small doses seems to surpass in curative power every other medicine; while, on the other hand, cases are met with apparently indicating the use of arsenic, and yet when the drug is given increase of gastric irritation follows so speedily and so constantly, that no doubt remains but that the medicine is doing harm and aggravating the complaint.

The best way perhaps to illustrate the action of arsenic in dyspepsia, will be to relate briefly a few cases where the drug was tried, and the reader will see with what result.

Mr. M——, aged 52 years, thin, of rather anxious look, been

dyspeptic for many years. He has pain after taking food, and flatulence, with acidity, and bad taste in the mouth, headache also, restless nights, loss of appetite and oxaluria. Tongue rather dry and clean. Magnesia with bismuth, charcoal, nitro-muriatic acid, tincture of nux vomica, and sundry other medicines were tried in this case with no real benefit. Iron also was tried, and latterly $\frac{1}{16}$th of a grain of the arseniate of iron was given in a pill twice a day, with the effect of decidedly increasing the gastric irritation ; and the patient gave it up and returned to pepsine and mineral acids, which seemed the most useful of the medicines that had been tried.

Case II. was that of Mrs. W——, a hospital patient, who had for many years suffered with gastric pain and vomiting. She was perfectly unable to touch meat, and lived on small quantities of milk. The tongue was small, with red papillæ projecting through greyish fur. Face apt to flush ; not much wasting of the body. Here the usual list of stomach medicines was given ; none did any good, except iodide of potassium, and this only for a time. The effect of one-drop doses of Fowler's solution in half an ounce of infus. calumbæ was to allay the pain, to stop the vomiting of the food, and to enable the patient to eat and digest small quantities of mutton. The tongue seemed to expand, become cleaner, and lose its irritable look. The patient took the arsenic for some time before she felt able to do without medicine, and I can truly say that one month of arsenic did more good than five months' treatment with other medicines.

Sarah E——, aged 40, was another similar case. Stomach very irritable ; rejects all kinds of food ; tongue small, contracted and furred. One drop of Fowler's solution arrested the vomiting, and she continued the remedy with great advantage.

Mary G—— had chronic phthisis, and every morning at 4 A.M. she wakes up with heat at the stomach and vomiting of clear water. Effervescing medicines and opiates gave some relief, but the most marked benefit was effected with one drop of the arsenical solution ; for a time the sickness and pain quite ceased, but in two weeks the bad symptoms returned, and the arsenic seemed, like the other drugs, to have lost all its power in controlling these symptoms. The tongue in this case was large and of a uniform buff colour all over.

So far as my present experience goes, I should say that the more purely local the gastric symptoms, the better is the chance of arsenic doing good. When there is much general exhaustion of system, with disordered urine or manifest hepatic congestion, arsenic is not of much promise as a remedy.

The small irritable tongue, with projecting papillæ and yellow or grey fur, indicates arsenic ; vomiting and burning pain after food also point to the use of this drug. The dose must be a very small one, say one drop of Fowler's arsenical solution, and if this does good on no account should the dose be increased in hope of forwarding the cure. Whether the medicine be given before or after meals does not seem to me an essential matter, but my preference is rather in favour of its use before the food. Finally, I would mention that I have generally made it a rule to give to the patient half an ounce of the infus. calumbæ alone three times a day for a week, and then I add the drop of arsenical solution ; when a patient has been taking a variety of medicines it is well to do this, and then there is no mistake as to the effect of the arsenic.

ON THE TREATMENT OF HERPES CIRCINATUS BY LOCAL ASTRINGENTS.

BY CHARLES H. ROBINSON, M.R.C.S.I., L.K.Q.C.P.I.

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HERPES circinatus is essentially an affection of youth, cases seldom occurring in adults. It is characterized by an eruption of vesicles, which form circular, oval, or semilunar patches, leaving the central portion of the skin unaffected. The patches are of different sizes, from a fourpenny piece to that of a half-crown, or even larger, and are met with most frequently on the face, neck, chest, fore-arms, and shoulders.

In its milder forms herpes circinatus, according to Neligan[1] and other authorities on affections of the skin, disappears in eight or ten days, but its duration is more usually prolonged for three or four weeks. If the patches are simultaneous in their eruption, the affection is generally slight; but when they come out in succession, the disease is prolonged by the repeated eruption of fresh crops of vesicles, each set running an independent course; in the latter case the disease often becomes chronic, lasting several weeks, sometimes months.

I consider in both these forms that treatment by local astringents answers all the purposes necessary, without constitutional or other medicines being required, and I think the cases detailed hereafter will show, from their duration and the form they exhibited, that these measures were amply sufficient. The astringents I principally made use of were the tincture of perchloride of iron, the sulphate of copper, and the tincture of iodine; sometimes one only, more often they were used alternately.

[1] Diseases of the Skin, p. 98.

I shall now detail, in as condensed a manner as the subject will admit of, a few cases which lately came under my notice, and in which this method of treatment was used.

CASE I.—14*th February.* Charles F——, aged 15, I saw this morning with a cluster of herpes circinatus on forehead and behind left ear, circular in shape. Each spot touched with iodine tincture. 15*th.* Iron tincture applied to each spot; itching less. 18*th.* Sulphate of copper used. 20*th.* The spots on forehead and behind left ear are gone, but two fresh patches have appeared—one at angle of mouth, the other on left cheek. The sulphate of copper was daily applied, and on the 24th he was cured.

CASE II.—16*th March.* C—— B——, aged 17, I saw with a herpetic patch (crescentic) under one axilla; applied sulphate of copper to it. 19*th.* Same treatment continued. Several smaller patches have appeared, some on back of neck, others in axilla; tincture of perchloride of iron to each spot, and on the 23d March he was free from them.

CASE III.—8*th April.* James T——, aged 25, came to me with four patches of herpes circinatus on right fore-arm; tincture of perchloride of iron applied to each. 10*th.* Itching gone. 13*th.* Several new spots have appeared. On the 18th April he was cured.

CASE IV.—4*th May.* I saw James Y——, aged 15, with several spots of herpes circinatus on right side of upper lip and on the chin; tincture of iron applied. 5*th.* A great number of spots have appeared since yesterday; to use zinc ointment twice daily. 6*th.* Face covered with the eruption, spots between the eyes, on forehead, cheeks, chin, &c. 8*th.* Used the perchloride of iron instead of zinc ointment; on the 13th May cured.

CASE V.—5*th May.* Charles F——, aged 16, came to me with three herpetic spots on left cheek; applied sulphate of copper to each. 7*th.* Several new patches have appeared; opened each vesicle as it appeared, and touched the centre with blue-stone. 8*th.* Another patch on left shoulder; tincture of iron applied to each. 10*th.* Two new spots on right hand; tincture of iodine to each. 12*th.* Cured.

Case VI.—24*th August.* Edward Q——, 28 years of age, I saw with a herpetic patch, size of half-a-crown, on right arm another smaller one on left arm; tincture of perchloride of iron applied. 26*th.* Itching gone. 27*th.* Tincture of iodine used. 30*th.* Another spot, size of a five-shilling piece, on back; same treatment was used, and on the 4th of September he was cured.

It will be seen from this that the result of the astringent treatment was as follows:— Case I. lasted ten days; Case II. seven days; Case III. ten days; Case IV. nine days; Case V. seven days; Case VI. ten days: making an average duration of less than nine days each, which, considering the nature of the cases, all being of the relapsing kind, I believe to be very favourable.

It may be remarked that although herpes circinatus is a disease essentially of youth, yet two of the above cases were in adults—one aged 25, the other 28 years of age.

I may mention that all these patients were inmates of the same institution, being under the same hygienic and dietary arrangements; but how it originated I am unable to say. No special cause can be assigned for it; sometimes, according to Cazenave, it is supposed to be produced by cold, or by the application of irritating lotions.

That herpes circinatus is contagious, is, I believe, now generally admitted, although formerly denied by some eminent dermatologists, Cazenave among the number. That the above cases prove its infectious powers I do not affirm; still I think they give rise to a strong suspicion that such was the fact, especially when it is remembered that they were all in constant communication, using the same towels and washing appliances, and therefore very liable, if it was contagious, to take it from one another.

NOTE ON ATROPIA AND ITS PHYSIOLOGICAL ANTAGONISTS.

BY ROBERTS BARTHOLOW, A.M., M.D.

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In the February number of the *Practitioner* just received from London, I find a paper by Dr. Fraser, "On Atropia as a Physiological Antidote to the Poisonous Action of Physostigma." No one can be more sensible than I of the originality and value of Dr. Fraser's researches into the physiological and therapeutical actions of remedies, but I must beg leave to say, in respect to this particular research, that he has been anticipated. When Dr. Fraser commenced his investigations in April 1868, I had already completed a study of the physiological antagonists of atropia. My investigations were submitted to the National Medical Association in an essay, to which was awarded one of the annual prizes for 1869. This paper may be found in vol. xx. of the Transactions. It is true I have not treated the subject in the masterly manner characteristic of Dr. Fraser's work, but the results are the same as those subsequently obtained by him. This question of priority is, however, of little consequence. But I may venture to express the belief, that the conclusions of an independent observer in another part of the world may add some weight to the experiments of Dr. Fraser. It is with this view that I now submit to the readers of the *Practitioner*, those portions of my essay having reference to these points.

ATROPIA AND PHYSOSTIGMIA.[1]

The opposite effects of atropia and physostigmia on the pupil are so striking, that a physiological antagonism, extending

[1] The Physostigmia (calabarine) employed in these researches was made by Merck, of Darmstadt, who enjoys a deservedly high reputation on the continent of Europe for his pharmaceutical preparations.

throughout the whole range of their action, would seem to be probable. The dilatation of the pupil as produced by atropia is due, as shown in the preceding pages, to contraction of the radiating fibres of the iris. As the circular fibres of the iris are innervated by the third pair, the contraction of the pupil produced by physostigmia must be due either to paralysis of the sympathetic or to excitation of the sphincter muscle. These two agents must, therefore, act oppositely upon the sympathetic system, or one must act upon the sympathetic and the other upon the nervous system of animal life.

Dr. Fraser,[1] of Edinburgh, has published an admirable paper upon the physiological effects of the extract of Calabar bean. I shall avail myself of his very exhaustive labours, assuming that what he has informed us of the action of Calabar bean is entirely correct. I take this position the more readily, because my own observations with this agent are entirely in accord with Dr. Fraser's. In order to a more ready comprehension of the reactions which ensue when these two agents are conjointly administered, I place in parallel columns the principal physiological effects of each :—

ATROPIA.	PHYSOSTIGMIA.
A spinal paralyser.	A spinal paralyser.
Destroys excitability of motor nerves.	Destroys excitability of motor nerves.
Destroys the muscular irritability.	Preserves the muscular irritability.
Destroys the excitability of the sensory nerves.	Increases rather than diminishes the excitability of the sensory nerves.
Increases the action of the heart and the arterial tension, by an excitation of the sympathetic. Increases action of heart after division of pneumogastric.	A large dose produces cardiac syncope; action of heart ceases in diastole. This effect is not produced through the pneumogastric, although this nerve is ultimately paralysed, for it follows when the pneumogastric is divided, nor does it result from paralysis of respiration. The cardiac syncope is due to a direct action on the cardiac ganglia.
	Diminishes arterial tension.
Increases respiratory movements.	Paralyses muscles of respiration.
Dilates the pupil.	Contracts the pupil.

We have now the data for estimating the influence which these agents exert upon each other, when administered together.

[1] Abstract of Dr. Fraser's paper in *American Journal of the Medical Sciences*, April 1868.

Experiment.—Injected under skin of a frog 20 minims of a solution containing $\frac{1}{48}$ of a grain of physostigmia and $\frac{1}{24}$ of a grain of atropia. In fifteen minutes there was complete paralysis of the hind extremities and partial paralysis of arms. Sensation was not abolished, for when the skin was pricked, or muscles pinched, the frog attempted to escape. Soon after, however, on pinching an extremity the limbs were agitated by violent tetanic spasms, especially the upper. A slight tap on the back produced these effects: closure of eyelids, a sharp cry, opisthotonos, and tetanic rigidity of the limbs. Meanwhile the frog lay completely relaxed without the least motion. When taken by the head and raised up, the limbs hung down perfectly flaccid. A quick sudden blow, however, induced the tremors and the tetanic shocks. He lay in this condition a half hour apparently dead, when I inserted under the skin of the thigh $\frac{1}{4}$ of a grain of the sulphate of atropia. Returning to the room after an absence of two hours, I found that all the toxic symptoms had disappeared; the frog jumped and was as active and lively in every respect as before the experiment commenced.

Experiment.—Injected as before under the skin of a frog $\frac{1}{16}$ of a grain of physostigmia. Paralysing effects were manifest in three hours. Then injected $\frac{1}{12}$ of a grain of atropia (sulphate). Soon after the atropia was administered, the frog, when struck a quick, slight blow, uttered a cry, and was agitated by sudden tonic contractions of all the muscles. Slow and gradual pressure with the fingers did not produce these tetanic convulsions, but a quick tap on any part of the body gave rise to them. Then injected an additional $\frac{1}{12}$ grain of sulphate of atropia. A succession of tremors soon after agitated all of the muscles, especially those of the thigh, the limbs and body being all the time perfectly limp and flaccid. When the tremors ceased, no tetanic spasms could be induced by a blow upon any part of the body. The frog then became entirely insensible to irritants, and appeared to be without life. On opening the chest, however, the heart was found to be pulsating strongly and equably 52 per minute.

Experiment.—To a cat administered $\frac{1}{8}$ of a grain of sulphate of atropia by subcutaneous injection. The usual toxic effects manifested themselves in a few minutes: dryness of mouth; redness and injection of the fauces; dilatation of pupils; partial paralysis

of hind extremities; sensibility to touch, to pain, and especially to temperature diminished; reflex movements normal. Injected then $\frac{1}{8}$ of a grain of calabarine. In five minutes decided contraction of the pupil occurred; paralysis of all the muscles of animal life took place, so that the cat hung perfectly limp and flaccid when suspended by the ears; occasional tremors, especially of the limbs, and slight tetanic spasms on irritation of surface occurred, notwithstanding the complete paralysis; respirations grew slower and slower, and after the lapse of three hours occurred only at the rate of one in five minutes; action of heart continued, but gradually lost power and diminished in frequency of pulsations; complete anæsthesia of cornea; reflex and accommodative movements of the eye finally abolished. Respiration ceased before action of heart.

In subsequent experiments I varied the proportions of atropia and calabarine (physostigmia) in order to ascertain how far these agents were antagonistic as to toxic power. Thus to a large and powerful cat I administered by hypodermic injection $\frac{1}{2}$ of a grain of sulphate of atropia, and $\frac{1}{2}\frac{1}{4}$ of a grain of physostigmia. The symptoms of atropia poisoning were first manifested, and afterward the effects characteristic of physostigmia, without, however, producing a fatal result. In corresponding doses physostigmia is more powerful than atropia; hence in order to obtain a balance of physiological effects, sufficient atropia must be administered to produce some dilatation of the pupil, and as physostigmia is slower and also longer in action, the effect of the atropia must be maintained by continued use. If a quantity of physostigmia, just sufficient to produce a fatal result, be administered, its toxic power may be counterbalanced by atropia given so as to maintain a slight degree of dilatation of the pupil. Large quantities of both these agents, administered simultaneously, so overpower the nervous centres (the cerebrum and respiratory centre) as to destroy life.

The results then of the study of the mutual reactions which obtain between atropia and physostigmia when administered together, may be stated as follow:—

Atropia and physostigmia are not antagonistic as regards their action upon the muscular system of animal life—paralysis being induced by both. Atropia produces paralysis by destroying the

muscular irritability and the excitability of the motor nerves; physostigmia by paralysing the spinal cord.

Atropia and physostigmia are antagonistic as regards their action on the sensory nerves; atropia destroying and physostigmia heightening the sensibility of these nerves.

They are antagonistic as to their influence over the respiratory movements; atropia increasing and physostigmia retarding them.

They are antagonistic in their action upon the heart; atropia producing excitation of the cardiac ganglia, and physostigmia paralysing these ganglia.

They are opposed in respect to their action on the sympathetic; atropia producing increased action of the sympathetic; physostigmia paralysing this system.

They have opposite effects on the pupil in virtue of opposite effects on the sympathetic; atropia dilating the pupil by its action on the radiating fibres of the iris; physostigmia contracting the pupil by paralysing the radiating fibres.

A very singular effect, which I was not prepared to find, is the peculiar exaltation of the reflex faculty produced in frogs, when these agents are administered together—a sudden irritation of the surface causing tetanic rigidity like electric shocks, the muscles immediately afterward resuming their very relaxed and flaccid condition. Atropia sensibly weakens, although it does not abolish entirely, the reflex faculty; physostigmia destroys the reflex faculty; yet the combination of the two agents produces effects not unlike those of strychnia. The analogy is preserved even after death, for post-mortem rigidity sets in at once and is very decided. The tetanic spasms must not be confounded with the tremors which are characteristic of physostigmia. These tetanic spasms are less marked in warm-blooded animals, but they nevertheless occur to a limited extent, and after death a marked degree of rigidity exists, the head and neck being curved back and the feet turned in.

Dr. Fraser also alludes to the reputed antagonism between atropia and prussic acid. As I have, in the essay referred to, examined this question, it may be worth while to submit my remarks upon this topic.

ATROPIA AND PRUSSIC ACID.

It has recently been asserted by M. Preyer that atropia is the physiological antidote to prussic acid. He was conducted to this conclusion by reflecting upon the mode in which prussic acid produces death. As prussic acid in large doses causes paralysis of the heart, he assumed that an agent which would paralyse the pneumogastric, the inhibitor nerve of the heart, and at the same time stimulate the central nervous apparatus of respiration, would prove to be the true physiological antidote. He, however, prudently restricts the use of atropia to those rare cases of poisoning by prussic acid, in which "there is apnœa and the heart remains beating."

There are various theoretical considerations opposed to this view. Piotronosky affirms that he has produced tetanic spasms of the heart and wrinkling in the transverse folds of its external fibres, by direct irritation of the vagus. This experiment is submitted in proof of the statement that the external fibres of the heart are innervated by the vagus and the internal by the sympathetic. If this be the case, it is obvious that an agent which simply paralyses the terminal filaments of the pneumogastric, would not supply the effect required. Moreover, division of the pneumogastric produces decided slowness of respiration, after having for a short period quickened it somewhat. Further, atropia has but little influence over the respiratory movements. Its real power consists in excitation of the cardiac ganglia of the sympathetic, and whatever of physiological antagonism there is between atropia and prussic acid must be referred to the difference in their action upon the heart.

Theoretical considerations must yield to the demonstrations of experiment. M. Preyer has demonstrated on rabbits and guinea-pigs, that the subcutaneous injection of small quantities of atropia is an unfailing antidote to prussic acid if employed quickly after the injection of the acid. I have submitted this statement to the test of experiment.

Experiment.—I passed into the throat of a pigeon, by means of a pipette, 5 minims of medicinal prussic acid (U.S.P.), and immediately injected $\frac{1}{24}$ of a grain of sulphate of atropia. The bird had in a few minutes convulsive movements of the head,

neck, and eyelids; fell down, and expired in a general convulsion of a tonic character.

The fatal result in the preceding experiment may be attributed to the atropia. In order to obviate this objection, I changed the order of administration of these agents. As pigeons are not very susceptible to the action of atropia, I also increased the quantity administered by subcutaneous injection.

Experiment.—Administered to a pigeon by subcutaneous injection one-eighth of a grain of atropia. When the influence of this began to be manifest, passed into the gullet by a pipette 5 minims of the medicinal hydrocyanic acid. Death ensued precisely as in the first case.

It may be urged against these experiments that pigeons are not suitable subjects. As cats are readily affected by both these agents, in my subsequent experiments I employed these animals. The details of the experiments and the results being so uniform, I need narrate but one as a type of all.

Experiment.—Administered by subcutaneous injection to a cat one-fourth of a grain of atropia. When the symptoms characteristic of atropia poisoning were produced, I poured into the gullet 10 minims of a medicinal hydrocyanic acid. The cat fell upon her side, had a few convulsive twitches of the extremities, uttered a sharp cry and expired.

In these experiments on cats I preferred to bring them under the influence of atropia before administering the prussic acid, because of the great difference in the rapidity with which these agents act. If there really existed a true physiological antagonism between them, there could be no difference in result whether atropia or prussic acid were first administered. It is clear, I think, that no such antagonism exists as supposed by M. Preyer, but it may be admitted that atropia will be useful in counteracting the depression of the heart's action in those rather exceptional cases in which the symptoms of poisoning are delayed, or in those cases in which just sufficient prussic acid has been administered to produce dangerous symptoms, there being time enough to employ cardiac stimulants.

[Owing to the great pressure of original papers, the Editor is obliged to postpone the commencement of the papers on Wines in Disease till next month.]

Reviews.

Report of the Committee on the Relations of Alcohol to Medicine. By John Bell, M.D., Chairman. Extracted from the Proceedings of the American Medical Association. Philadelphia: Collins. 1869.

We know nothing of the circumstances under which this report was called for, and as Englishmen we may be forgiven if we are ignorant of the precise degree of scientific authority which attaches to Dr. John Bell in America. But the document before us purports to come with the whole authority of the American Medical Association, and thus bears, on the face of it, an apparent imprimatur of the medical profession of the United States. It is impossible, therefore, to avoid discussing it, although we must confess our surprise that American medical men should have been willing to sanction such a series of statements and arguments as are here put forward.

The report, we must say in the first place, bears evident marks of a foregone conclusion on the part of the writer; it can hardly be doubted that, being himself committed to teetotal principles, although he is willing to concede that alcohol may be a useful *medicine* under particular circumstances, he is determined not to admit its claim to be a *food* either in the stricter or the looser interpretation of that word. The consequence of this is that he fails altogether to treat the subject with that dispassionate calmness which its great importance demands, and that he is constantly assuming the certainty of positions for which, in reality, no proof whatever exists.

Dr. Bell proposes to treat of alcohol in its relations to medicine under the special headings of Hygiene, Etiology, Therapeutics, and Medical Jurisprudence. Under the first department, of course, he deals with the effects of alcoholic liquors as an element of ordinary diet; and it would seem obvious that for any scientific investigation of this subject it was necessary to limit the inquiry strictly to the results of a temperate use of these agents. On the contrary, however, Dr. Bell at once introduces considerations relative to the indisputably pernicious effects of large potations. But what is still more objectionable, he from the first assumes the fact that alcohol is a poison—*i.e.* universally and essentially—which is, of course, one of the points

most energetically contested; and he expends a great deal of declamation which should have been reserved for the topics which come under the heading of etiology, or the effect which alcoholic *excesses* undoubtedly exert in producing disease. As regards the disputed food-value of alcohol, it is curious that Dr. Bell appears quite unconscious of the position in which matters at present stand. He is obliged, in one place, to refer to recent researches which distinctly prove that all but an inconsiderable quantity of the alcohol which we take undergoes oxidation in the body; but he fails to see that this is so, and that in that case probability is altogether in favour of the belief that it acts as a force-producer within the body. We can scarcely be wrong in supposing that this confusion arises from an inadequate appreciation of the facts of modern physiological chemistry, since we find that while ridiculing Liebig's theory of food, which he says has been upset by Fricke (*sic.*) and Wislicenus, we find him, on the other hand, quoting with approval (at second-hand) that very portion of the Liebigian theory which has been most completely shaken, namely, the notion that muscular force is derived mainly from the combustion of nitrogenous matters. It is suspicious also that he speaks of alcohol as a "hydrate of carbon." But the worst point of all is, that although Dr. Bell has evidently referred to the researches of Schulinus, and of Anstie and Dupré, which for the first time attempted the quantitative estimation of the alcohol excreted in an unchanged condition, he allows himself to bring forward again the well-worn, but now thoroughly discredited, experiments of Lallemand, as if to still leave open a loophole for the possible retention of the theory of the total elimination of alcohol, and the consequent deduction that it acts as a simple poison! We protest against this course, as unfair and unscientific in the highest degree. It is as certain as anything can be that all but a small portion of the ingested alcohol undergoes oxidation in the body; and this being the case, the *onus* lies on those who deny the alimentary character of alcohol, of explaining how a hydrocarbonous substance of this kind, taken into the body in quantities of from half an ounce to two ounces *per diem*, can fail by its combustion to generate force. That the force thus generated does not appear as *heat* (more especially as heat capable of being measured at the periphery) proves nothing; there are many different ways in which it may be applied to vital purposes within the organism without producing any mensurable elevation of temperature. Dr. Bell seems to be still haunted with the notion that an aliment must pass into the structure of the tissues before it can produce force; but we need hardly tell our readers that the whole tendency of recent physiological experimentation has been to prove that this is a delusion—that as regards muscular force,

for example, there can scarcely be a doubt that the bulk of the dynamic work is done by the oxidation of hydrocarbons and hydrates of carbon *derived from the food*, and circulating in the blood.

In short, it is necessary to insist, as against Dr. Bell and all other people who argue in the same fashion, on the following points :—(1.) It is certain that alcohol, equally with the hydrocarbons and hydrates of carbon of ordinary solid foods, is oxidized within the body. (2.) As regards that part of ordinary foods which goes to the building up and repair of tissue, all recent research goes to discredit the idea that special tissues are directly nourished by food ingredients that exactly resemble them in constitution; consequently there is no more *à priori* reason that alcohol should not assist the nutrition of tissues into which fat enters, than that fatty or saccharine foods should do so. As a matter of fact alcohol in *large* quantities does generate fat in the blood, to an extent perceptible to microscopic inspection; and it is surely *possible* that the fatty elements of tissues may be directly increased by the action of dietetic doses of alcohol. No doubt, in the case of alcoholic excesses, this would run in the direction of *degeneration;* but it is quite conceivable that, taken in moderation, the alcoholic hydrocarbon helps the formation of the most important kind of fat, that which assists in the building up of cells of every kind, and which in the nervous system is of preeminent importance. (3.) The only argument of importance that can be urged against the probability that alcohol by its oxidation in the body generates force which directly assists vital function is the apparent fact, that the elimination of carbonic acid from the lungs is, on the whole, rather diminished than increased by alcoholic liquors. But there are many other products of the oxidation of alcohol besides carbonic acid, and although analysis has failed to discover these as yet, it cannot be pretended that anything like an adequate search has been made for them. In particular, the muscular juice has never yet been adequately examined for this purpose.

As regards Dr. Bell's remarks on etiology, or the causation of disease by alcohol, we have not much to say: the greater part of his allegations are such as all physicians are agreed to admit as regards the effects often produced by alcoholic excesses. Two things, however, we note as serious faults. In the first place, he repeats the usual reckless statements of the teetotal party as to the proportion of crime and insanity which is due to drunkenness, without an attempt to sift the complex causes (of which drunkenness is only one, and often a secondary one) that predispose large masses of the population to a reckless mode of life. And secondly, Dr. Bell repeats without qualification the old assertion that alcoholic excesses are responsible for the great

majority of cases of cirrhosis of the liver and of granular disease of the kidney; a proof that he either does not know of, or unfairly ignores, the positive statement of Dr. Dickinson, one of our highest authorities, that Glasgow, the most drunken city, perhaps, in the world, enjoys a very remarkable immunity from these diseases, in comparison with other towns. Our own experience on this question entirely confirms the opinion of Dr. Dickinson; and although we grant that a tendency to fibroid degeneration of viscera is one of the characteristic consequences of prolonged alcoholic intemperance, we are convinced that the serious and fatal forms of cirrhotic liver and kidney disease are not caused by alcoholic intemperance without the aid of some other very powerful factors, of which anxiety of mind and physical destitution are probably the most important.

Equally unjust, we are sorry to say, is Dr. Bell's mode of dealing with the opinions of those who think more highly than he does of the *therapeutic* action of alcohol. For instance, he constantly speaks of the present representatives of Todd's opinions as if they were in the habit of recommending, uniformly, very high doses of stimulants in acute diseases. The very essence, however, of the position assumed by the editor of this journal, for instance, is that there is no uniformity whatever in the dose appropriate to cases of the same acute disease in different individuals. It is true that in certain instances, such as those which Dr. Bell has quoted from "Stimulants and Narcotics," very high doses of alcohol have been found to produce remarkably good results, and Dr. Anstie has insisted particularly on the fact that in such cases none of the intoxicative effects of alcohol are produced. In subsequent papers he has shown that it is possible, by the use of the sphygmograph and of chemical tests to the urine, to detect much finer *nuances* of the intoxicative effects of narcotic doses than could formerly be perceived, and with this improved machinery of observation he has still found that in particular cases of fever, of pneumonia, &c., enormous doses of alcohol fail to produce the slightest sign of narcotic depression, while they sensibly improve the patient's pyrexial symptoms. But he has no less strenuously urged, and demonstrated by the same improved tests, that many other cases, nominally of the same diseases, require little or no alcohol, and immediately display their unfitness for it by exhibiting at least the slightest degrees of intoxication. It is therefore unmeaning for Dr. Bell and others, who are opposed on theoretical grounds to the free use of alcohol under any circumstances, to treat as *indiscriminate*, a form of stimulation that is based on calculations which, however imperfect, really represent the only attempt that has been seriously made to lay down scientific rules.

We cannot afford further space to discuss this elaborate and yet

unsatisfactory report, but we must again express our regret that the sincere and honourable opponents of alcohol will persist in a mode of argumentation which can lead to no possible good. If the teetotallers in our profession had their eyes open, they could not but perceive that they only deepen the gulf between themselves and the mass of unprejudiced physicians by special pleading which ignores obvious facts. We beg to remind them, in concluding this notice, of a few maxims, which are truisms, but which they are continually neglecting. Firstly, when one investigates the hygienic effect of an article of diet which is almost universally employed, one ought to inquire, not what is the result of its excessive and extraordinary consumption by a small fraction of the population, but what is the state of health of the immeasureably greater numbers who take it in moderation. Secondly, before laying down absolutely that such and such an agent is food, and such and such another is not, it would be proper to come to some understanding as to whether there is any scientific definition, that will hold water, of the limits of the alimentary group of substances. (We challenge Dr. Bell to quote or to invent one.) Thirdly, it would be well, before imputing confusion of ideas to those who speak of stimulation as if it included at once the reduction of excessive or convulsive actions, and the restoration of fatigued or paralysed organs to activity, to ask oneself whether this double series of actions is not daily observed to follow the ingestion of easily digested common food—the typical stimulus—in diseased conditions?

Winter and Spring on the Shores of the Mediterranean. By J. Henry Bennet, M.D., &c., &c. Fourth Edition. London: Churchill, 1870.

The Climate of the South of France. By C. T. Williams, M.D. Oxon., F.R.C.P., &c., Assistant Physician to the Brompton Hospital for Consumption. London: Longmans, 1870.

The Climate and Resources of Madeira. By Michael C. Grabham, M.D., F.R.G.S., M.R.C.P., &c., &c. London: Churchill, 1870.

The three books before us illustrate with considerable force the unhappy differences of opinion which exist in the profession concerning that important matter, the climatic treatment of consumption. There are not many points on which all three authors are agreed; but there is a much greater accord between Dr. Bennet and Dr. Williams than between either of these and Dr. Grabham; while between Dr. Bennet and Dr. Grabham, especially, there may be said to be nearly total opposition and contradiction. Moreover, the scientific difference between the latter is obviously—rather too obviously—sharpened by the interest which is

naturally taken by resident practitioners in rival health-resorts in the prosperity of their respective colonies. Dr. Williams's book is at any rate free from this fault, and consequently presents an air of impartiality which is an agreeable change to the reader who has perused the other two volumes.

We shall say a few words, in the first place, about Dr. Grabham's book, because it represents that view of the climatic treatment of phthisis which is least in accordance with the tendency of recent scientific opinion. It is a warm defence of the climate of Madeira, and an assertion of its superior efficacy to that of the now more fashionable health-resorts on the French shores of the Mediterranean; and it takes quite the old ground of argument, insisting on the all-importance of a mild, moist, and equable climate, and deriding and denouncing, as a mere temporary whim, the modern tendency to seek for comparatively cool and bracing health-resorts in phthisis. It is remarkable that Dr. Grabham seems quite unconscious of the fact that, whether such climates as those of the Riviera are or are not to be considered as finally satisfactory, the tendency to employ them is an indication of a change in medical opinion which there is not the smallest probability of our seeing reversed. The steadily and constantly humid atmosphere of Madeira does indeed secure a great equability of its climate, and thus removes one of the direct causes of catarrh, and of the indirect sources of aggravation of preliminary mischief. But it is strange that Dr. Grabham should forget that even catarrh has other frequent sources besides varying temperature, and his experience of Madeira must have been altogether peculiar if he has not seen plenty of patients in whom the depressing effect of its atmosphere upon the nervous system has, in fact, prolonged and rather aggravated existing tendencies to catarrh. And, although we are not yet in a position to decide the precise manner in which dampness of soil produces the remarkably prejudicial effects which the researches of Bowditch and Buchanan have revealed, we may be pretty sure that dampness of the atmosphere, and consequent retention of organic impurities by it, play the principal part. In fact it may be granted that Madeira has one merit, but it cannot be allowed to have any others. That merit is the softness and equability of climate which allows invalids to pass a considerable time in the open air; and to a few very irritable patients it is a matter of life or death that this shall be accomplished with the smallest possible risk of catching cold. On the other hand, there is direct and positive testimony which Dr. Grabham's own account does not in the least contradict, that there is no sort of immunity from tuberculous diseases among the natives, but very much the reverse; and this is, after all, the consideration which, more and

more, the profession are learning to accept as the ground for selection of a health-resort in phthisis. In the absence of any facts which could improve the reputation of Madeira in this respect, it is to be regretted that Dr. Grabham has chosen to treat every depreciatory criticism of its merits as if it had been dictated either by extreme folly or by interested hostility. He has not improved the position of affairs, nor will any impartial person familiar with recent work in connection with the pathology and treatment of phthisis be more inclined to send patients to Madeira from reading his book.

Of Dr. Bennet's book it is rather difficult to speak with critical fairness. The present is a fourth edition, and both book and author are so familiar to the profession and the public, that it is needless to dwell on the cleverness which is abundantly displayed in its pages. It is Dr. Bennet's destiny to be a pioneer to scientific discoveries, which it requires a certain amount of poetic imagination to conceive. The tragic side of this tendency was displayed in his revelation of the appalling frequency of inflammation and ulceration of the uterus; the peacefully idyllic strain, which is doubtless more congenial to his feelings, finds expression in his charming descriptions of the phthisis-laden sufferer exhaling his deadly malady among the lemon groves of Mentone. The present edition of his work is, so far as we remember, a considerable improvement on its predecessors; and at any rate it is interesting to know that whereas Dr. Bennet formerly praised Mentone on the strength of its intrinsic merits, he now praises it still more highly, because, after making a painful pilgrimage to a number of other Mediterranean health-resorts, he finds none of them comparable to his first love. The attractions of the book are now very varied: independently of the author's picturesque style, and the easy fluency with which he describes the scenery of such widely different places as the Riviera, Corsica, Sicily, Spain, Algeria, and the Italian lakes, there is philosophic gossip about social matters; there are pictures of pretty Kabyle women, Spanish senoritas buying tickets for the bull-fight, and Arab dancing girls; there are occasional bursts of eloquence (*e.g.* about the revival of Italian freedom); and, after all, these varied ingredients are but the sauce to the solid pudding of science, although this last, it must be confessed, appears rather in the form of slices, *rechauffé*, than of the fragrant rotundity which comes fresh from the pot. Dr. Bennet has done good service in introducing Mentone to public notice, but we must say that it is rather irritating to find him ignoring or insufficiently discussing some of the points which are well known to be crucial in consideration of the worth of any place as a sanatorium for phthisis. For instance, as to the question of mountain climates in phthisis, he seems to be far

from appreciating the weight of evidence now accumulated in favour of the Alpine valleys, for he speaks of the proposal to keep phthisical patients in these districts during the winter as if it were a mere visionary speculation, instead of an experiment which in fact has been actually tried with a large amount of success. It is certainly unfair, in presence of the carefully reported facts from St. Moritz and the Davos, to speak of the winter climates of these places as if they were so dangerously uncertain as to render it impossible for phthisical patients to take frequent open-air exercise without risk of acute complications. On the contrary, it has been proved, on unimpeachable evidence, that the patients in these health-resorts are able to take drives nearly every day, to sleep with their windows open, and to sit in the open air on the sunny side of the house. If mere variability of temperature were enough to condemn a place as a health-resort in phthisis, there is evidence in Dr. Bennet's own book, to say nothing of other writers, to show that Mentone is by no means free from such changes. And it is scarcely necessary to say that mere lowness of temperature has never been proved to be prejudicial to phthisis; indeed such evidence as exists is all the other way. Our own experience has been to this effect:—(1) pure cold, if the air be dry and tolerably still does no harm: indeed, if the patient be properly wrapped up out of doors, and keeps up good heat *and also good ventilation* in-doors, it seems to do distinct good to the majority of cases; (2) cold *wind* really is dangerous, and there is less immunity from this in the towns of the Riviera, not excluding Mentone, than there is in the high but sheltered Alpine valleys; (3) impurity of air, whether with or without dampness, is the most fatal influence of all in developing the phthisical disposition: and, in regard to freedom from this defect, the elevated Alpine valleys, it can hardly be doubted, are distinctly superior to the Riviera health-resorts.

We have no wish, however, to assume the position of champions of the Alpine health-resorts as against localities like the Riviera. We are speaking strictly in the critical character, and our argument is not directed against the salubrity of Mentone, but against the apparent prejudice which leads Dr. Bennet to ignore the facts in favour of permanent residence in mountain regions. It would be most unfortunate if his powerful influence should divert the profession from a fair trial of what appears to be the most promising experiment in the treatment of consumption which has ever been made. Let it never be forgotten that, after all, these high mountain valleys (whether at 10,000 feet elevation in the neighbourhood of the equator, or 5,000 feet in the Engadine, or 1,500 feet in the centre of Germany) are the districts *naturally free from endemic phthisis*, and that no other districts—not even the Riviera—approach them in this

respect. There is then a strong *à priori* probability that these mountain districts would prove curative, or at least helpful, in cases of actual disease—a probability which could only be set aside by positive evidence to the contrary. But all the real evidence is, in fact, directly favourable to this idea.

We have another somewhat serious quarrel with Dr. Bennet. He has given us abundance of picturesque descriptions, most charming, and in general not too highly coloured, of the natural beauties and delights of Mentone. But he has passed by, almost in silence, one very serious defect of this place; we refer to the obstacles to walking exercise. These are very serious to all but the exceptionally robust; and even driving is not possible except within a comparatively limited range. In fact this is a very general complaint among just that class of patients for whom a change of climate should do the most, namely those in whom the disease is of medium intensity and development. When one remembers that at Mentone such patients are condemned to the minimum of exercise, and that even the amusement of sitting still in the open air must be limited to days on which the sea is calm and still, one finds reason to receive his encomiums with considerable qualification. In taking leave of his book, however, we must again repeat the experience of our full appreciation of the interesting and varied information which it conveys, and of the picturesque way in which he has set forth the claims of a very valuable health-region. We trust that the remarkable improvement in his own health which first led him to settle at Mentone and advocate its claims before the profession and the public may be fully maintained in future years.

Of Dr. Williams's book we have less to say, not because it is smaller in size than Dr. Bennet's, but because it presents fewer objectionable features. Dr. Williams is an enthusiast about the Riviera, and he is, we think, unjust to the claims of Alpine health-resorts. But he is evidently free from bias in favour of any particular place, and he gives, as we think, a much juster estimate of the merits of Cannes, Hyères, and Nice than is afforded by Dr. Bennet. He notices, as regards Mentone, a fault which is too little dwelt on in Dr. Bennet's work, namely, the close and rather stifling atmosphere. And he is fully alive to the fact that the greater possibility of locomotion at Hyères and Cannes goes far to compensate for the comparatively imperfect character of their protection from cold winds. As regards his meteorological theories we must speak with a certain amount of reserve. On pages 29—34, for instance, he discusses the theory of the formation of the dreaded "mistral." His hypothesis describes this wind as a west-north-west upper aërial current from British North America, and supposes that the earth's rotation changes it to a north-west current which would descend to supply the

vacuum caused by the rarefaction of air over the heated Mediterranean. The obvious hitch in the theory is the assumption that such a current would be prevented from descending to supply the partial vacuum caused by the heating and rarefaction of the air in contact with the Gulf Stream, by the fact that the excessive loading of this air with aqueous vapour forms a screen nearly impervious to heat, and therefore limits rarefaction to the lower strata of the atmosphere. Such vacuum as might be formed is supposed to be adequately filled by "the upper equatorial current, which here descends and forms the south-west wind prevalent in the temperate regions of the Atlantic." This seems to us a hard saying. Dr. Williams himself is conscious of its somewhat over-theoretic look, and justifies himself for its production by the necessity of assigning a "cosmical" origin for "so powerful an effect as the mistral." No doubt, however, the greater moistness of the mistral than that of the "bise," or north-easterly wind prevalent at Nice, is *pro tanto* a support to this theory.

On the whole we think Dr. Williams gives a very judicially impartial estimate of the principal and secondary health-resorts in the Riviera and its neighbourhood. And we are glad to see that in the Appendix—which we have to quarrel with as doing scant justice to the Engadine—Dr. Williams introduces some appreciative remarks about Bormio, which, as yet, seems to us to have been strangely neglected as a health-resort. We cannot help thinking that he might have extended his encomiums, and pointed out the probable uses of Bormio as a winter residence for phthisical patients. But we must not expect every one to see as we do about this matter of Alpine climates for phthisis; although we believe there is a good time coming in this, as in some other matters.

Clinic of the Month.

Skim-milk Diet in Cases of Fatty Degeneration, &c.—Dr. A. S. Donkin continues his observations on the efficacy of a skim-milk diet in various forms of disease. In regard to its advantage in this, he observes that it affords no pabulum for the development or nutrition of fat, existing either abnormally in diseased muscular fibre, or in adipose tissue in cases of obesity. An exclusively skim-milk diet will therefore, he maintains, be found, in cases of polysarcia and of diseased tissue often associated with it, to be a much more potent and agreeable remedy than the system called Bantingism. He subjoins the following case, in which he adopted this remedy in consultation with his friend Mr. R. Robson, of Durham. A lady was suffering from great dyspnœa on the slightest exertion, but without any valvular disease to account for it, and without any other apparent disease except fatty degeneration, which there was good reason to believe had commenced in the heart and elsewhere in the muscular system. The patient had long indulged in an excessively fatty diet and sedentary habits, and she was in a state of great obesity. A skim-milk diet was prescribed and strictly adhered to for several months, and with a marvellously good effect. The symptoms of angina pectoris soon began to subside, and ultimately disappeared altogether, while the obesity was remarkably diminished, and the patient enabled to enjoy exercise freely and without inconvenience. (See *Lancet*, April 30.)

Treatment of Rheumatic Fever by Perchloride of Iron.—Dr. Trestrail, of Harston, in a communication to the *British Medical Journal*, gives a caution in respect to the use of this remedy, to which it is perhaps worth while to direct attention. He thinks it likely that its administration would increase the tendency to the formation of coagula which already exists in cases of rheumatic fever, owing to the excess of fibrin in the blood in this disease, and hence that its use would increase the number of such complications as urgent dyspnœa from the plugging up of pulmonary vessels, cerebral symptoms from emboli obstructing the flow of blood to the brain, &c.; to say nothing of the danger of the valves of the heart becoming more frequently permanently damaged by deposits on their surface. He refers to cases, detailed by other observers, in which

symptoms characteristic of such affections supervened under the use of perchloride of iron; and hence contends that the alkaline treatment is preferable, since it tends very materially to lessen the disposition to such complications, and to subsequent disease of the heart. (See *British Medical Journal*, May 7, 1870.)

Replantation of Teeth in Chronic Periodontitis.—There is nothing perhaps so unsatisfactory to the dentist as the extraction, in the general run of cases, of teeth for the relief of periodontitis, though it is followed by the cessation of acute pain, especially in the gums, since the teeth themselves are sometimes almost perfect, or at least in a condition fit for doing good work for many years. The success, therefore, obtained by Mr. Coleman in replanting teeth in the disease in question, will be received with unquestionable satisfaction, and the plan no doubt largely imitated. The method of procedure is to remove the diseased tooth; if carious, to clean out its pulp and fang cavities, filling them up, after cleaning with carbolic acid, with cotton wool impregnated with the same; then to fill the pulp and carious cavities; next to scrape the fangs free from all diseased periosteum and cementum, but preserving the mucous membrane about the neck; and after bathing in a solution of carbolic acid the tooth, as well as the alveolus, to return the former to its place. Mr. Lyons has carried out this practice in fourteen cases for Mr. Coleman, with success in the case of bicuspids and molars, no mechanical appliances being used to keep the teeth supported until they had become firm. Mr. Coleman believes replantation will become the legitimate mode of treatment for chronic periodontitis. (See *Lancet*, May 7, and "Transactions of the Odontological Society," March 1870.)

Improved Operation for Fistula in Ano.—Instead of the bistoury impinged upon the finger *in ano*, and brought down through the sphincter with some difficulty, Mr. Weeden Cooke has employed a scissors, the blades being separately passed into the fistula and rectum, and then connected by means of a moveable screw. Mr. Cooke operated with this instrument, which was made at his suggestion by Messrs. Weiss, at the Royal Free Hospital on the 23d of April. Having introduced his fingers into the rectum, he passed one blade of the instrument into the fistula up to the extreme point; he then passed into the rectum the other blade up to a corresponding point. The two blades were then connected by a small screw, and with one rapid scissors-action the operation was completed in a second of time. The pain was infinitely less than that produced by the bistoury. As the position required for this operation renders the use of chloroform very difficult, it is well known that the shrinking of the patient often gives trouble to the surgeon, so that the

rapidity of this method of operating is important both to the patient and the surgeon; and, in the case referred to, its efficiency was verified by Mr. Cooke's colleagues who were present.

New Mechanical Aid to Labour.—Dr. Protheroe Smith, after referring to the amount of force exerted by the uterus and abdominal muscles in the act of delivery, as estimated by Professor Haughton, namely 54·1 lb. by the former and 523·65 lb. by the latter, points out that the difference between the easy and rapid delivery of woman in the savage state as compared with the lingering, tedious, and difficult delivery of civilized life, lies in the fact that in the savage the lumbo-abdominal muscles are much more fully developed. The defect of development of these muscles in the civilized woman he attributes, in part at least, to the custom of suspending the clothes by a cincture around the waist, by which the structure of the muscular tissue becomes deteriorated. To obviate and subsidize this defect—in a word, to supply the want of voluntary muscular force during parturition—he has constructed and recommends the employment of an instrument consisting essentially of a metal framework or support fitting the hollow of the lumbar spinal region, to the lower part of which springs are attached encircling the belly and joining in front in a pubic pad, to the middle of which is attached an abdominal belt, and to the upper part of which are attached a pair of springs passing round the body beneath the axilla, and terminating in a sternal pad. Dr. Smith gives a series of cases in which the application of this apparatus, which must, of course, be accurately adapted to the figure of the patient, materially facilitated the process of labour. (See *Lancet*, June 4, 1870.)

New Operation for the Cure of Varicose Veins.—Mr. Stokes has been recently treating varicose veins on a plan which was suggested to him by Sir Dominic Corrigan. It occurred to Sir Dominic that as hæmorrhoidal tumours are, as a rule, so successfully treated by the application of strong nitric acid, the application of this acid to varicose veins in other situations would probably be attended with equally good results. In a case which is still under observation in the Richmond Hospital this plan of treatment has been attended with the happiest results. The patient is a young man, aged 21, and was admitted into the hospital on the 15th of last month. He had a varicose tumour of the size of a small orange on the inner aspect of the middle third of the right leg. It had existed for seven years. He suffered also from a large varicose ulcer, which existed over the inner ankle of the same leg; and there was also a second tumour, formed of a cluster of varicose veins, in the right groin. Mr. Stokes performed the operation in the following way. Pressure having been made above and below the tumour, the

integuments were raised from the tumour, and an incision by transfixion was made over the veins. The *fuming* nitric acid was then applied to the external coats of the veins. No pain attended this application. On the following day the contents of the tumour appeared solidified at the base; and the acid was again applied. The process of solidification then went on rapidly, the tumour at the same time decreasing in size. A week after the operation some coagulated blood appeared at the site of the operation, and the following day a portion of the vein came away. This was followed by a slight local inflammation, which, however, after a few days quite subsided. The wound was then for some days dressed with tinct. benzoin. co. and glycerine, when it rapidly healed, as did also the ulcer; and the large varicose tumour in the groin rapidly disappeared. Sir D. Corrigan recently visited the patient in company with Mr. Stokes, and expressed himself much gratified with the result of the operation. (See *British Medical Journal*, May 21, 1870.)

Carbolic Acid in Syphilis with severe Throat Symptoms.—Dr. Swaby Smith records an interesting case where the advantages of the topical application of the acid were signally displayed. The patient was a respectable woman, aged 32, suffering from local soreness consequent on syphilis contracted from her first husband. When first seen the whole throat internally was seriously diseased. The tonsils and uvula were destroyed, and the surface of the pharynx throughout its entire extent presented a sloughing surface, constantly secreting a tenacious and most offensive pus-like matter. The disease had also spread quite through the posterior nares, and there was a constant discharge from the nostrils. Owing to the excessive soreness and irritation it was hardly possible for the patient to swallow food of any kind, whether liquid or solid, whilst its mixture with the offensive matter appeared to derange her stomach, and had caused her to become extremely emaciated and feeble. On July 2, 1869, Calvert's carbolic acid (made fluid according to the printed instructions, but not in any degree diluted) was applied to the whole of the diseased surface by means of a camel-hair brush. She was directed to take a pint and a half of porter, half a pint of beef-tea, and an egg. She was also ordered 5 minims of liq. cinchonæ, 5 minims of Battley's solution of opium, and 10 grains of iodide of potassium in an ounce of water three times a day. On the following day the throat was found to be much less sore, and she could speak and eat with greater ease. The throat was again brushed out, but with a solution of only one part of the acid to 60 of water. After about three weeks iodide of iron was substituted for the former medicine, and the improvement continued. By the 1st of September she was convalescent. In

this case, therefore, the topical application of carbolic acid to an almost hopelessly diseased syphilitic sore throat proved of the most essential service, and it is certainly deserving of further trial. (See *Lancet*, June 4, 1870.)

Treatment of Lepra by Copaiba.—Dr. Simms read a paper at a recent meeting of the Medical Society on the treatment of this disease, in which he narrated a very obstinate case which had resisted the action of various remedies, but at length was so much benefited by the use of copaiba, that for two years there had been no return of the complaint. Dr. Simms considers copaiba to be best adapted for recent cases in young persons, with whom the specific eruption appears quickly. In older people the specific copaiba eruption is often produced with difficulty, or not at all, and yet they recover at times under the use of the drug. The nauseating properties of copaiba constitute one cause of its failure, and the uncertain direction in which it often exerts its influence is often a hindrance in its curative action. In alluding to other drugs, Dr. Simms believed the cures effected by arsenic are often obtained with detriment to the general health. In the debate following the reading of the paper, Mr. Erasmus Wilson stated that he had tabulated 500 cases of lepra, and had noticed that it was often associated with tubercle, and that it was frequently hereditary. He had used arsenic largely in combination with iron, and had never met with any injurious or dangerous effects from it. Of local remedies tar, well rubbed in, had seemed very valuable. (See *British Medical Journal*, June 4, 1870.)

Severe Constitutional Effects from a Blister.—Dr. Campbell, of Garland's Asylum near Carlisle, records a remarkable case of constitutional disorder consequent on the application of the liquor vesicatorius, to the extent of 5 inches square, over each side of the chest. The liquor was applied at 3 P.M., for the purpose of relieving chronic bronchitis; at 6 a linseed-meal poultice was put on, and at 9 the patient was found sitting on the night-stool, looking most haggard and exhausted, depressed in mind and evidently suffering great pain. The pulse was 96, weak; he complained of tenesmus, a little fæces and bloody slime having passed, of pain at the root of the penis and strangury. The blistered surface was sponged with warm water, and a glass of gin with eight grains of Dover's powder were given: both were, however, immediately vomited. A draught containing fifteen minims of both tincture of opium and sp. of chloroform in acetate of ammonia was administered, but without advantage. An enema of hot oil, with a drachm of solution of hydrochlorate of morphia, was injected, returned at once, and repeated with the effect of enabling him to lie down in bed. At 2 A.M., having taken a little

chlorodyne in the meanwhile, the tenesmus was quite gone, but the strangury continued. The urine contained much urates, but was otherwise normal. A degree of soreness about the rectum and penis remained for two days, and he had to take castor-oil every second day for some time, but perfect recovery resulted. (See *British Medical Journal*, June 4, 1870.)

Bichloride of Mercury in the treatment of Nervous Affections.—Dr. Wilks, in the course of some remarks on miscellaneous cases, gave an account of a man, aged 40, who received, two months before his admission into the hospital, a severe blow upon the back of the head. This injury was followed by persistent and severe frontal cephalalgia, occasional temporary attacks of loss of consciousness, and on one occasion loss of power in the right arm. On admission there was great nervous excitement and restlessness, and impairment of consciousness. These symptoms soon subsided on the administration of small doses of bichloride of mercury. The general nervous affection passed off, and left the patient in a good state of health, with the exception of the pain in the head, which still persisted. Dr. Wilks speaks favourably of the good results of preparations of mercury in cases of obscure nervous affections, with much irritability and mental disturbance. A case of this kind was also alluded to, in which the failure of many other remedies was speedily followed by the successful administration of five-grain doses of grey powder. (See *Lancet*, June 4, 1870.)

Bromide of Potassium in Ague.—Dr. Moxon observes that this drug was first introduced into medical practice as a remedy for enlargement of the spleen, by Dr. Williams, but the cases Dr. W. records do not show any relation of the remedy to ague poison especially. During the last four months, trial has been made at Guy's Hospital amongst the out-patients of the use of bromide of potassium in ague. The results are such as to show that this drug possesses a very remarkable power over ague, and a power that promises to be of important use in many of the more obstinate cases. Dr. Moxon has had several instances of its successful employment, and two of them were persons who had taken quinine for a length of time without benefit. The following is one of the cases recorded:—S. S——, aged 19, a gardener, from Streatham, came under Dr. Rees's care with tertian ague, on June 13, 1869. He stated that he had had paroxysms of ague every third day, between four and five in the afternoon, for the last two months, and had taken quinine during the whole of that time, but had derived no benefit or relief of any kind therefrom. On admission he had the general appearance of a healthy lad, but complained of tenderness in both hypochondriac regions. There was extended dulness over the liver, and

also over the spleen. On the following day he was ordered two grains of quinine, in infusion of gentian, three times a day. After pursuing this treatment for a fortnight he was no better. The bromide of potassium was then ordered, in doses of twenty grains in infusion of gentian, thrice daily. On June 30th he was noted to have been free from attacks since the 27th, and felt better. On July 3d the splenic dulness was diminished, and he felt well. On the 7th July he was discharged well. During this patient's stay in hospital he had taken eighty-four grains of quinine without benefit, but after the first sixty grains of bromide of potassium he pronounced himself materially relieved. A considerable number of other more recent cases have been treated in the same way, and this has been the general result, that the bromide always checks the ague, so that for one or two weeks the patients have no seizures; that in some of the cases the cure is permanent, even while the patients still continue to reside in the place where they took the ague; but that in many cases, when the patient is still in the ague district, the ague fits return after one or two weeks of free interval. (See *British Medical Journal,* June 11, 1870.)

Extracts from British and Foreign Journals.

Treatment of Habitual Constipation.—M. Leclère observes that this is a common affection, and that although fair health is not always incompatible with irregularity in the functions of the bowels, yet various disorders are very commonly ultimately produced. The means commonly adopted are: 1. Enemata, which at first sight appear rational, but their constant employment tends to render the constipation more obstinate, hot water in particular abolishing the sensibility of the mucous membrane, and enfeebling the contractility of the muscular tunics. 2. Oily substances are sometimes introduced into the rectum, or demulcents like decoction of marsh-mallow; these lubricate the surface of the intestine, and favour the discharge of the fæcal matters, but they by no means tend to re-establish the functions of the intestine. 3. Indigestible substances are not unfrequently taken, such as brown bread, white mustard seeds, prune pulp, which in their passage along the intestine, from which they are discharged unaltered, slightly irritate the mucous membrane, and augment the secretion of the glands. 4. Purgatives, which seem so precisely indicated in constipation, and are so commonly used, are dangerous, and almost always induce an aggravation of the habitual state by augmenting the dryness of the mucous membrane, and rendering it insensible. 5. Bretonneau and Trousseau both recommended belladonna in cases of habitual constipation with the happiest results, especially in cases where probably a certain degree of erethism of the canal was present. Hyoscyamus and tobacco have also been prescribed. M. Meuriot suggests that its action is due to its producing an irritation and an active congestion of the mucous membrane, followed by a hypersecretion of fluid. Belladonna, however, is apt to affect the sight and to impair digestion. 6. The external as well as the internal use of cold is often serviceable. 7. Electricity is sometimes effectual in temporary obstruction, but rarely or never in habitual constipation. 8. Nux vomica proves occasionally very serviceable in cases of flatulent dyspepsia and tympanitis, but it is inefficient to procure a radical cure of habitual constipation. 9. Lastly, tonics which are often indicated have themselves a tendency to produce constipation. After thus commenting on the principal modes of combating constipation, M. Leclère pro-

ceeds to point out the great advantage derivable from the employment of the waters of Plombières in the treatment of this affection, their action being, in his opinion, quite special on the nervous system of the abdomen. He admits, however, the importance of attention to regimen and to exercise, the effects in many instances being much heightened by nux vomica. (*Bulletin Général de Thérapeutique*, 7e, Livraison, 1870.)

Treatment of Hysteria by Inhalations of Ethereal Tincture of Valerian.—M. Guillemin states he noted the effects of this mode of treatment in twenty-seven cases, till he became so convinced of its efficacy that he ceased to record the results. He gives the details of one severe case, in which there was complete loss of consciousness, and other symptoms which appear to us to have been of an epileptiform character. The attack was very prolonged; various plans of treatment were tried without advantage, including the inhalation of pure ether; at length he experimented with the ethereal tincture of valerian, and found that when administered for little more than a minute, violent excitation occurred, followed by quiescence and sleep, and no recurrence took place. (*La Revue Médicale*, March 26, 1870.)

Bromide of Potassium in Diabetes Mellitus.—Dr. Austin Flint relates three cases in which benefit was derived from the employment of this drug in cases of saccharine diabetes, and he suggests that further trial of it should be made with a view of ascertaining whether it is entitled to be classed with other remedies that are sometimes useful. In one of the cases about 10 pints of urine were being passed *per diem*, the specific gravity being 1·040. Trommer's test showed the presence of sugar in abundance. His appetite was good, and there were no dyspeptic ailments. The skin was dry. He was placed on an anti-diabetic diet, and the bromide of potassium was prescribed in 15-grain doses, three times a day. On Nov. 1, five days after the commencement of the treatment, the quantity of the urine had fallen to the natural standard; the specific gravity was 1·030. Nov. 17: The bromide had been continued in the interval between this and the 5th Nov., and the specific gravity had fallen to 1·024. Trommer's test showed still the presence of some sugar. He complained of feeling sleepy during the day, and it was accordingly discontinued, and the specific gravity of the urine at the time of the last note had risen to 1·028. The patient, in addition to all kinds of meat, inclusive of fish, oysters, and eggs, was allowed celery, lettuce, onions, cauliflower, tomatoes, and some apples, both raw and roasted, which he found a good substitute for potatoes. He took tea and coffee with cream, and a small

quantity of roasted bread, and was by no means dissatisfied with his diet. (*The American Practitioner*, vol. v. No. 1.)

Treatment of Epilepsy by the preparations of Copper and Zinc.—M. Voisin, of the Salpêtrière Hospital, has written an important paper on this subject; important, because his experience has been large, and also because the cases he reports are genuine cases of cure, the epileptic attack having ceased to appear for ten years or more. Whilst admitting that bromide of potassium and other agents affecting the vascular system often prove of great value, he observes it would be absurd to think that they can effect a cure in all cases, or even produce any amelioration, and he thinks the remedies previously approved have of late been too much neglected. These include the lactate of zinc, the nitrate of silver, the ammoniacal sulphate of copper—in short, the metallic preparations. M. Voisin gives the record of a number of cases that occurred under the care of M. Herpin, in which excellent results were obtained. Amongst the vegetable remedies employed, we observe valerian, mugwort, belladonna, digitalis, and hyoscyamus—though in all, the administration of the metallic preparations above mentioned constituted the essential part of the treatment. He appears to entertain no sort of question respecting the curability of epilepsy, and many of the cases he has reported have lasted for several years. (*Bulletin Général de Thérapeutique*, March 15, 1870.)

Intrauterine Injections of Nitrate of Silver in cases of Uterine Catarrh.—M. H. Gantillon gives an account of an interesting case in which this plan of treatment, combined with the use of laminaria probes, proved successful. The patient was unmarried, 30 years of age, childless, and healthy till the end of the year 1868. Then she began to have pains in the belly, with headache, debility, and with discharge of a thick gelatinous character. On examination with the speculum the neck of the uterus was found to be of natural size, with antero-flexion towards the right side, and the canal extremely narrow. A plug dipped in alum was applied with general sustentative treatment, and these measures were continued for six weeks. On the 15th of December a laminaria probe No. 5 was introduced, and on successive days larger and larger probes, till a No. 13 bougie could be passed. On the 2d of January he injected a strong solution of nitrate of silver. No colic was experienced, and the patient, after an injection of cold water, walked about as usual. From this time forth she was cured, and no further treatment was required. (*Gazette des Hôpitaux*, April 14, 1870.)

Treatment of Variola with Carbolic Acid.—M. Chauffard states he has for some time advantageously employed carbolic

acid in variola. He selected the worst cases, and administered it in all those he judged likely to prove fatal. In five such cases recovery occurred in four. He considers it possesses a special action on the secondary fever, and is superior to all remedies hitherto proposed in its power of arresting the febrile symptoms, whilst others only give the patient the capability of supporting it. In two cases the confluence was extreme, and seemed beyond the hope of recovery; yet the acid treatment proved successful. In the fatal case death occurred from pulmonary congestion, which had been present throughout. The dose given was 15 gr. for men, and about 12 grains for women, in water, and continued for from eight to ten days. (*La Revue Médicale*, April 16, 1870.)

Enterotomy in Ileus.—The practice of making an artificial anus in cases of intestinal obstruction was first suggested by Maunory in 1819; it has been alternately approved and denounced by numerous writers. The latest writer in its favour is Dr. Fräntzel, of Berlin. The principal arguments against opening the abdomen in any given case are: first, the occurrence of numerous recoveries from intussusception, even when the most serious symptoms, such as fæcal vomiting, have set in; and secondly, the difficulty that is always experienced in diagnosing the probable site of the obstruction before opening the abdomen, and of discovering its actual site afterwards. Dr. Fräntzel's proposition, however, consists in making an artificial anus above the obstruction, and he considers that the situation where this should be made can be ascertained by attention to the sounds elicited on percussion; for it is constantly found that the intestine above the point of obstruction is tympanitic, and yields a metallic sound on percussion, and that this sound as the disease advances gradually spreads farther and farther from the point of obstruction, whilst the parts below are dull. He therefore proposes to cut down upon the tympanitic region, which is certainly situated above the site of constriction or obstruction, and to establish an artificial anus. He adduces a number of cases which bear out his views. (*Virchow's Archiv*, Heft ii. 1870.)

Chromic Acid in Cutaneous Diseases.—Dr. Purdon calls attention to the advantages to be derived from the use of chromic acid in condylomata, verrucæ, horny growths, &c., and further notices that it proves extremely serviceable in tinea circinata, in the proportion of 1 of the acid to 7 or 8 of water. A single application is sometimes sufficient to effect a cure. He has obtained similar good results in cases of tinea tonsurans, sycosis, and other parasitical affections. For condylomata and verrucæ he finds the proportions of 1 to 3 of water, and for chronic eczema 1 to 10 of water. The editor of the *Lyon Médicale* states that similar solutions have in his hands proved

efficacious in cases of eczema, and also in some of the dry diseases of the skin, like psoriasis. Finally, it has effected a cure in a case of hypertrophic lupus, with exuberant vegetation. (*Journal de Médecine*, &c., March 1870.)

Calabar Bean in Suppuration of the Cornea.—M. Galezowski expresses himself in favour of the instillation of solution of Calabar bean in the treatment of this form of ophthalmic disease. The contractile action exerted by the bean on the vessels of the cornea opposes their dilatation and congestion, and singularly aids the cicatrization of wounds. Belladonna, which produces opposite effects, should, he thinks, be discarded in these affections. (*Annuaire de Thérapeutique*, 1870.)

Pomatum for the Prevention and Cure of Baldness.—M. Hardy gives the following as an effective application:—

Suet, 65 parts.
Castor-oil, 25 parts.
Gallic acid, 2 parts.
Essence of vanilla, q.s. mix. (Ibid.)

Treatment of Aphonia from Paralysis of Intrinsic Muscles of Larynx.—Dr. Oliver, of Massachusetts, proposes a new mode of treatment for that form of laryngeal paralysis called by Mackenzie "paralysis of the adductors of the vocal cords," and by Tobold "phonic paralysis," a form which is bilateral in character, and dependent, in the majority of cases, upon general debility and hysteria, or other impairment of the nervous system; but sometimes upon emotional influences and a weakened condition of the muscles following laryngitis, or the straining of the voice, and more rarely upon rheumatism and other blood diseases. Laryngoscopic examination exhibits either complete or incomplete paralysis of the cords; in the former case these ligaments, on attempted phonation, remaining widely separated, in the latter approaching the median line to a greater or less extent. The methods of treatment commonly employed in such cases are as follows: 1. Galvanism. 2. The application of stimulating liquids to the interior of the larynx, or the inhalation of stimulating gases. 3. The gymnastics of the larynx suggested by Von Bruns, the patient being asked to produce simple sounds whilst the laryngeal mirror is in position in the pharynx. 4. The employment of an anæsthetic. 5. General treatment, change of air, tonics, &c. The plan suggested by Dr. Oliver consists in the external manipulation of the larynx, the wings of the thyroid cartilage being compressed in their posterior and upper part by the thumb and forefinger. The result of this is to approximate and stretch the vocal cords. At the same

moment the patient is directed to sound "a" or "ah." He considers that many of these cases are dependent upon a lack of power to *start the machinery* of the vocal apparatus, whilst when once started the power of keeping up the action is easily afforded. Dr. Oliver gives a series of cases in which a single sitting sufficed to effect a cure. He considers this plan to be contraindicated in cases of excessive general debility, or when there is a decided tendency to hæmoptysis, and he thinks that it may be employed either alone or in conjunction with one or other of the plans mentioned above. (*Hay's American Journal*, April 1870.)

Treatment of Orchitis by Antimoniated Inunctions.—M. Isaac states he has frequently treated orchitis in this mode with success. He commences by pricking the skin with the point of a lancet from the external inguinal ring downwards along the course of the cord as far as the scrotum, and then rubs in an ointment containing potassio-tartrate of antimony until a crop of pustules is produced. Care must be taken that the ointment be not too strong or rubbed in too violently, so that the pustules are too numerous, lest cicatrices or gangrene of the scrotum result. Usually three or four frictions are sufficient, but they should be repeated as long as steady and continuous improvement does not occur. The same reasons that render it unadvisable to apply leeches to the scrotum, contraindicate the application of the ointment to this part. The only dressing required is a little cerate spread on lint. Under the influence of the eruption thus produced, which probably acts as a revulsive, the pain of the orchitis disappears in forty-eight hours. The tumefaction of the epididymis undergoes considerable diminution in the course of ten days, and the cure is complete in three weeks without likelihood of relapse. (*Sud Médical*, 1870, Nos. 1 and 2.)

Injection of Ergot in Aneurism.—At a late meeting of the Medical Society at Königsberg, Herr Schneider gave the details of a case of aneurism of the femoral artery in which this mode of treatment, recommended by Von Langenbeck, failed, the case being subsequently cured by the application of digital compression. At the same time he reported a case of strumous disease which had progressed most favourably under the injection of pure tincture of iodine, at several consecutive visits, into the tumour by means of a fine injection syringe (Pravaz). (*Berliner klinische Wochenschrift*, No. 20.)

Treatment of Chronic Rheumatism by Electricity.—M. Cherron has arrived at the following conclusions from his experiments :—1. The swellings and other malformations of the joints occasioned by chronic rheumatism may be considerably

diminished by the application of the constant current. 2. The pain accompanying the disease may be greatly abated even after a few applications. 3. If the atrophy of the joint be not complete, its anchylosis can be effectually prevented. 4. Calcareous deposits, contractions, retractions, and muscular atrophy occurring in chronic rheumatism can be materially relieved by this mode of treatment, and may sometimes be altogether cured. 5. The application of a constant current never acts injuriously, since, besides its local effects, it acts on the constitution generally, improving the nutrition, and thus not only moderating the dyscrasia, but eliminating it from the body altogether, as is manifested by the permanent relief that is obtained. (*Giornale Veneto di Scienze Mediche*, December 1869.)

Injection of Iodized Solutions into the Uterus for Metrorrhagia.—M. Dupierris recommends the adoption of this mode of treatment in the hæmorrhages that occur after childbirth, and as a means of preventing the access of puerperal fever. The remedy produces an excitation of the internal surface of the uterus, which tends powerfully to make it contract and constrict the open mouths of the vessels. It thus aids the uterus in its efforts to expel clots, but does not, like the perchloride of iron, act as a direct hæmostatic, or cause the formation of small clots in the mouths of the vessels, which, although doubtless stopping the flow of blood, are yet of the nature of foreign bodies, and may become the source of various accidents. The iodized injections are most useful in cases of metrorrhagia with inertia of the uterus. As regards the mode of their application, he clears out all clots from the interior of the organ, and then injects through a gum elastic tube, with considerable force, a solution containing water two parts, tincture of iodine one part, and a small proportion of iodide of potassium. The fluid escapes freely by the side of the fingers holding the sound or catheter; the uterus quickly contracts, the lochia are sparing and free from ill smell, and recovery quickly follows. (*Union Médicale de la Gironde*, Février 1870.)

Dumbness cured by Electricity.—M. Jubiot records a remarkable case (possibly hysterical) of a young girl, aged 17, who for twenty-eight months remained completely dumb, but was otherwise perfectly well. The attack had supervened suddenly, the speech being lost in the morning, though she had gone to bed perfectly well. From this moment she had lost her natural vivacity, and had become almost idiotic, eating little, and with the tongue curved upwards. A surgeon divided the frænum, and the tongue regained its natural position. After being idiotic for four months her intelligence and appetite returned, the lips and tongue executed movements, but no

sound was audible; the velum palati was not paralysed; deglutition was easy; no circumstances were present which could give rise to a suspicion that the girl was feigning; there were no rheumatic symptoms. M. Jubiot conceived that nocturnal convulsions might have occurred, and with this notion applied a reophore to the neck and to the lateral and anterior regions of the neck. Up to this time the patient had been unable to articulate a word, or to make the least sound. When she was pinched or pricked her tears flowed silently. On the second day of treatment M. Jubiot obtained a confused noise in consequence of painful impressions. On the eighth or tenth day she shouted out loudly; on the twentieth she could articulate a few words; and the next day she said very clearly, "Bon jour, monsieur; je suis bien, je suis guérie." (*Marseille Médicale*, Jan. 1870.)

Tetanus. Recovery after employment of Chloroform.—M. Simonin, of Nancy, gives the following case: A workman, aged 37 years, received a slight wound with contusion on the back of the left hand. Thirteen days after the accident tetanus supervened, and presented the usual symptoms of pain in the throat and neck; difficult deglutition, complete trismus, rigidity of the muscles of the abdomen, as well as of those of the upper and lower limbs; opisthotonos; pain in the temples, nose, and lips; risus sardonicus; violent and sudden muscular contractions; immobility of the thoracic cage; anxiety; want of appetite; constipation; extreme thirst; insomnia; cold sweats, alternating with flushes; pulse 120, and 40 inspirations per minute; difficulty in passing water; extreme emaciation. These symptoms reached their acmé on the ninth day, and death appeared to be imminent. The improvement, which was followed by a return to health, commenced on the twenty-fourth or twenty-fifth day, but his life was in danger on the twenty-sixth day, in consequence of a sharp attack of bronchitis. The cure was certain on the fortieth day, and he left the hospital on the seventy-eighth day, the wound having healed with difficulty, and some stiffness remaining in the arm. The principal treatment consisted in causing him to respire air strongly charged with the vapour of chloroform. The napkin was placed on his chest impregnated with chloroform in a room having a capacity of forty square yards. Upwards of five-and-forty pounds of chloroform were used, and for nine days about two pounds per diem were used. This treatment was protracted through twenty-two days. A few small doses of opium and hydrate of chloral were administered, but were speedily discontinued at the wish of the patient. The diet consisted at first of beef-tea, ice, wine, beer, and coffee; but subsequently it

was made as generous as possible. (*La Revue Médicale*, 30 Avril, 1870.)

Treatment of Thrush.—M Parenta, of Turin, has, from his connection with the Maternité Hospital in that city, had abundant opportunities of studying this disease. He regards it as a distinct disease, almost peculiar to infants, and usually idiopathic. It is not a stomatitis, but a parasitic affection, free from danger, except under unusual circumstances. It is characterised by the presence of the oidium albicans, the germs of which are floating in the air. The modifications they produce in the secretion of the buccal fluid are a consequence, and not the cause, of the disease. It is not a symptom of the intestinal affections by which it is so often accompanied, for these are produced secondarily by disorders of the nutrition. Besides general hygienic treatment, the local therapeutic means which prove most efficacious, are sulphur, a solution of chloride of sodium, and a solution of nitrate of silver, with camphorated alcohol, applied successively according to the degree of intensity of the disease. (*La Gazette de Turin* and *La Revue Médicale*, April 3, 1870.)

On the Treatment of Penetrating Wounds of the Chest and Lungs.—Dr. Jacenko, of Kiew, observes, that in the text-books diametrically opposite statements are made in regard to these three questions: First, shall a penetrating chest wound be sewn up or not? secondly, where a prolapse of the lungs has occurred, shall it or shall it not be returned? and thirdly, in the event of a foreign body having entered the cavity of the pleura, is it right to attempt its removal? The subject has occupied his attention for four years, and the following are some of the principal results at which he has arrived. If, as is well-known, the pleura be opened, the lung collapses; but if the air which has entered be removed, the lung again expands. Now the removal of the air may be effected easily by means of a funnel provided with a valve opening only in one direction, or by means of a funnel with a stop-cock; or lastly, by an instrument analogous in its action to a stomach-pump. Dr. Jacenko has satisfactorily demonstrated the possibility of thus removing the air by experiments on animals, in which both pleuræ were opened, restoring respiration and life to animals in whom death was imminent. It was found much more difficult to hermetically seal the wound and prevent the further entrance of air, but he accomplished this by carefully suturing the lips of the wound, and dragging the healthy integument over the seat of injury, so as in point of fact to render it a valvular opening. For this purpose iron wire was found most appropriate. The action of the air on the pleura was always shown on the injured side in animals dying, after some days, with one pleura open, by pleuritic

effusion; whilst the opposite side, which had been wounded at the same time but closed up, remained healthy. In regard to wounds of the lung, again, he by no means takes a desponding view of them, since not only can the flow of blood from the wounded organ be arrested, but, which is more important, its activity can be restored, as is demonstrated by the following experiment. A knife was plunged into a rabbit so as to open the pleura and wound the lung. The external wound was enlarged, the injured part of the lung discovered and drawn out; a silk thread was cast around it and drawn tight, completely isolating a portion of the lung. (In such injuries it is remarkable no hæmorrhage from the *lung* ever occurred.) Lukewarm water was now injected into the cavity of the pleura; over the external wound a glass funnel with a valve, and caoutchouc tube for exerting suction was placed, the blood and air contained in the cavity of the pleura were thus withdrawn, and the external wound carefully sewn up. After twelve days the rabbit was killed, and on examination not a trace of pleurisy was found to be present. The lung crepitated everywhere, and there was consequently no atelectasis. At the site of the injury to the lung was a small radiated and slightly depressed cicatrix. (*Centralblatt*, April 30, 1870.)

Recovery of Vision by an Artificial Fistula of the Cornea in Leucoma.—Dr. Gradenigo, of Venice, reports a case of a man, aged 27, who had suffered from granular lids, and had in consequence lost the left eye from destruction of the cornea. The right eye became subsequently affected, and, notwithstanding it was subjected to treatment, an extensive ulceration of the cornea occurred, which left on healing a cicatricial tissue that entirely obscured the vision. The lids continued to be touched with sulphate of copper, until, to his joy, the blind man perceived a ray of light in the left eye, the brilliancy of which steadily increased; a corneal fistula formed spontaneously, and, like an artificial pupil, gave passage to the light, and diminished the tension and hardness of the eye. It proved suggestive to the surgeon, who immediately made an opening in the centre of the opposite opaque cornea, and touched the minute ulcer daily with the sulphate of copper: a fistula was thus produced with prolapse of the membrane of Descemet, and continued to become clearer, until at length he could walk through the streets unaccompanied, and read the type No. 50 of M. Giraud Teulon's type. (*Cosmos*, 7th May, 1870.)

Notes and Queries.

DEPARTMENT OF NEW INVENTIONS.

Tidman's Sea Salt.—When sea water is evaporated to dryness there remains about 3·5 per cent. of saline residue. About three-fourths of this residue is chloride of sodium, the rest being chiefly chloride and sulphate of magnesium, chloride of potassium, sulphate of calcium, and a small amount of bromide of magnesium.

Chloride of sodium, according to the uses to which it is put, or the sources whence it is derived, is known as common salt, kitchen salt, rock salt, sea salt, &c., the latter term being applied to an impure chloride of sodium obtained from sea water. This chloride of sodium (sea salt), however, although generally contaminated by chloride and sulphate of magnesium and sulphate of calcium, does not, when re-dissolved, constitute sea water, inasmuch as some of the most characteristic salts of the sea water are either absent, or present only in much diminished proportion, having remained dissolved in the mother-liquor from which the chloride of sodium has crystallized out. This mother-liquor is sometimes allowed to run back into the sea, or the salts contained in it are extracted by a special process of manufacture, subsequent to the removal of the chloride of sodium. As far as we are aware no article is at present obtainable in London containing all the salts of sea water in their proper proportion, and which, therefore, when dissolved in the necessary quantity of water, would really constitute a sea bath.

The annexed table contains the results of a recent analysis of Tidman's Sea Salt, and for the sake of comparison are added the composition of the dry residue left on evaporation of the water of the German Ocean (according to Bischoff), and also of two samples of impure chloride of sodium manufactured in France from sea water.

We will leave it to our readers to draw their own conclusions from the table.

The sample of Tidman's sea salt analysed was packed in a small wooden box, the lid and the two small sides of which were covered with a large yellow label. On this label was printed: 1st, on

the lid, "Tidman's Sea Salt. For Producing a real Sea Bath in your own room. Dr. Hassall's report and directions are enclosed in each package. N.B. Each Bag or Box should bear the words, 'Tidman's Sea Salt,' without which none are genuine. Sole Proprietors—Tidman and Son, 10, Wormwood Street, London, E.C." 2nd, on each of the smaller sides the label bears in the centre the trade mark—a bag with the words "Tidman's Sea Salt" upon it; with "Trade Mark" printed right and left, and "7 lb." above. Round the sides of the label stands, "Extracted from the Foaming Billows! Recommended by the Faculty! Patronised by the Nobility! N.B. Beware of Imitations!" In addition, one side of the box is marked on the wood, "7 lb. Tidman's Sea Salt."

The salt consists chiefly of chloride of sodium, and contains only very minute traces of either potassium or bromine.

	Residue from Sea Water.	Tidman's Sea Salt.	French Salts.	
			1st.	2nd.
Chloride of sodium	78·04	94·98	97·39	95·10
,, potassium . . .	2·09	—	—	—
,, magnesium . . .	8·81	1·34	0·24	1·71
,, calcium	0·20	—	—	—
Bromide of magnesium . .	0·28	—	—	—
Sulphate of magnesium . .	6·58	1·39	1·33	0·54
,, calcium	3·82	1.50	0·93	1·79
Carbonates of calcium and magnesium	0·18	—	—	—
Insoluble impurities and loss.	—	0·79	0·11	0·86
	100·00	100·00	100·00	100·00

A New Ice Pessary.—Mr. Bird, whose very ingenious inhaling-pipe was noticed some months ago in this journal, has now invented a little instrument likely to be of great service in many affections of the rectum and vagina. It is a hollow cylinder, with rounded ends, made of very thin polished metal, and unscrewing so as to allow the cavity to be filled with ice, or with a freezing mixture. Mr. Bird was led to invent it for the relief of a friend who suffered acute agony from hæmorrhoids, complicated with enlarged prostate, and its success was so perfect that he is led to believe the remedy may prove widely useful. For our own part, we should be inclined to think that even more important uses would be found for it as a vaginal application in states of uterine congestion, vaginismus, &c. Ice is the *one* form of pessary whose benefits in such cases are attended with no drawback on the score of *irritation* of the sexual feeling, but, on the contrary, include a most beneficial *sedative* action.

Gaiffe's Induction Apparatus.—In answer to several correspondents who inquire where this faradising machine can be purchased, we may say that we believe Messrs. Squire, the chemists, are the sole agents in England.

Subcutaneous Injection of Indian Hemp.—In answer to "W. W." we have to say that our own experience is not favourable to this mode of administration of cannabis. The tincture is irritating to the subcutaneous tissue. Lately we have found much benefit from the use, in localised painful affections, of a liniment composed of tinct. cannabis, chloroform, āā ʒss; ol. olivæ ʒiij. The chloroform appears to aid the absorption of the active matter of the hemp, in accordance with Wallis's recent experiments on its effect in aiding the cutaneous absorption of atropine.

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[1] Any of the foreign works may be procured by application to Williams & Norgate, of Henrietta Street, Covent Garden, W.C.; or Messrs. Dulau, of Soho Square, W.C.

THE PRACTITIONER.

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Original Communications.

REMARKS ON THE ACTION OF THE HYDRATE OF CHLORAL IN PARALYSIS OF THE INSANE AND OTHER FORMS OF INSANITY.

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As to the hypnotic action of this medicine there can be no doubt; this is allowed by all who have used it and given their experience to the profession. What, however, has been much wanted in the treatment of the terrible, distressing, and hopeless form of disease we are about to speak of, is an agent which will not only give good rest by night, but which, if given in smaller quantity by day, will soothe and calm the patient, and act on the sensory ganglia, which evidently are the parts of the nervous tissue chiefly involved. Hydrate of chloral will, in a great measure, fulfil these ends if properly and judiciously administered.

Since the 9th of March, 1870, hydrate of chloral has been administered to 26 patients in this hospital: 13 cases of paralysis of the insane (8 of them being destructive and noisy), 9 cases subject to periodic maniacal attacks, 3 cases of melancholia, 1 of dementia.

The patients labouring under paralysis of the insane were in different stages of the disease—8 of them being sleepless, noisy,

screeching, shouting, violent, and destructive of clothing and furniture, and such of them as were able to walk continually on the move. The other 5 cases were partially demented, occasionally noisy, with exalted delusions, but as yet not destructive.

In all the 8 destructive cases, with doses varying from 15 to 30 grains, good sleep was procured for seven and eight hours, and not attended by loss of appetite, constipation, drowsiness, or morning sickness. In most of the cases the sleep was followed by a general calming influence, more so than after any other hypnotic, and which continued for several hours. One patient required 45 grains to cause sleep when in the sick ward; but place the same patient in a dark cabin by night, and 20 grains will induce sleep. This patient is in the first stage of the disease, full of exalted delusions, very noisy, shouting to such an extent as to be heard all over the building, violent and destructive.

At night he is placed in a cabin by himself; 15 grains are given him, and repeated every two hours until he sleeps. He passes a good night, and he is removed next morning to the sick ward, where he is washed and dressed. During five days of the seven he is quiet and easily managed, and this calm state often continues until bedtime. On other mornings he is not, however, quite so well; he is like a giant refreshed with sleep, and will in a short time upset the ward, tear his clothing, and destroy some of the furniture. Let 10 or 15 grains be given him, and it is astonishing how soon he becomes quiet, but he does not sleep. I prefer to see this calm condition produced during the day, rather than sleep, as in this comparatively good state he can be sent to the airing ground with the other patients, and practically it is found that he gives no trouble. One morning I was walking in the quadrangle, when this man began to shout, and attempted to break one of the windows. I at once visited him and got him to take 10 grains, and in a quarter of an hour he became calm, and began to hum hymns and say his prayers. In order to test the beneficial action of chloral, a few mornings ago I purposely refrained from giving it to him, when he began to show symptoms of violence, and, instead of giving it, I ordered an attendant specially to watch and take care of him. He soon

became unmanageable; 10 grains were given, which brought him round to his ordinary quiescent state. He began to take chloral on the 9th of March, and it has been continued to the 1st of July.

During the first thirty-one days, 815 grains were administered, giving him a daily average of 29 grains; for the next fifty days, 1,130 grains were given, the daily average being 22 grains; and from the 1st to the 20th of June, 490 grains were taken—the daily average was now slightly increased, as 24½ grains were required.

It was then given up, in consequence of symptoms of prostration supervening, which, however, very soon passed away; and during the 21st, 22d, 23d, and 24th, he was so very quiet by day, and slept so well by night, that it was not necessary to give any. He seemed during this time as if under its influence: took his food well; appetite being, I may say, voracious. This, however, is a symptom of the disease in many instances. But in all patients who are under the influence of this medicine the appetite is found to be excellent.

On the 25th he became so very restless and violent that it was determined to give chloral as before. He required, on the first night, 45 grains, given at intervals of two hours, before he became calm; and up to the end of June, 20 grains daily were found to be sufficient. Between his entrance on the 5th March and the end of March, he lost 8 lbs. in weight; since then he has held his own up to the 16th June, and from that date to the 1st of July he has gained ground, looks better, is stronger, and walks with a firmer step.

Another patient, who is far advanced in nerve-softening, being demented, noisy, destructive, and who for three days and nights before he took chloral did not sleep a wink, required 45 grains before he slept, and then slept for eight hours. During the following three days and nights the calming influence continued, and he slept at intervals, the attendant feeding him when awake. At the end of the three days he again became restless, noisy, and destructive; and on the evening of the fourth day I began to administer 15 grains every two hours until he had taken 60 grains, when sleep supervened. He slept at this time nine hours, and it was followed by a

calming and soothing effect for three days and nights. Since then a small quantity—some nights 15 grains, other nights 22 grains—causes good sleep, and of late the quantity has been reduced to 10 grains.

It is not now administered every night, but given when the patient begins to show symptoms of restlessness. It is found that if it is neglected to be given when these symptoms present, and he is allowed to be noisy for a whole night, or even for a few hours, a much larger dose is necessary in order to calm him. What answers in each individual case must be discovered by experience, and it is individual treatment that will prove beneficial. He has had from first to last 1,020 grains without a bad symptom.

I might proceed and state the individual treatment of the other six destructive cases, but it would be, in a great measure, a repetition. It is not only in the noisy and destructive cases that this remedy will be found useful, but also in the treatment of those patients who, although not destructive, are full of exalted delusions, and at stated periods become excited and troublesome. I shall mention one case: he is full of exalted delusions; one day expecting to be Governor-General of India, and another day to command the Channel Fleet. He is constantly subject to abnormal sensations that certain portions of his body are removed from him, stomach being torn out of him, and a dragging sensation at his heart. Hallucinations of hearing are common as well as illusions of vision. Memory is very defective. For his own safety he requires to be continually under observation. He therefore sleeps by night under the observation of the watch; when awake by night he is abusive of every one, accusing the attendants of causing the abnormal sensations. So fully impressed is he with the belief that they cause these sensations, that whenever he sees me he makes complaints against one and all of cruel treatment. By day it is a repetition of the same complaints, with an occasional growl against an ungrateful country for having forgotten such a distinguished servant. This patient, before his illness, was one of the most amiable of men, but before he began to take chloral his language became unbearable. On the 3rd April he began to take 15 grains at bedtime in a glass of

brandy and water, and it has been continued daily until the 27th June, 735 grains having been taken during that time without a bad symptom. His nights have been excellent; he has not, on any occasion, disturbed the other patients; and in the morning, instead of being exceedingly troublesome to every one, he is quiet and civil to all. This happy state continues until after dinner, when the influence gradually passes away and he gets into a talkative mood. As he is, however, at this time in the open air, it is not necessary to repeat the chloral. I have no doubt 10 grains at this time would calm him; my desire is to reserve it for a more advanced period of the disease. Digitalis in this patient soon caused an intermitting pulse, and hypodermic injections of morphia produced sleep for a few hours, but as soon as the sleep passed away he was worse than before, particularly as to the abnormal sensations, and he required purgatives to act on the bowels. On the other hand, under the chloral treatment all the natural functions are performed regularly; he has gained flesh, and is certainly more rational.

It often happens that after a patient has passed through the first stage of the disease he gets comparatively well; the exalted delusions vanish, and he becomes comparatively rational, although the external physical symptoms remain, such as thickness of speech and diminished motor power. Many thus get so well, that when friends visit them, they find them so much improved that they are deceived, and flatter themselves that they are quite well. Patients in this state are most uncertain in their conduct; suddenly they break out with their delusions. As, for instance, such a patient came to me two days ago, informing me he had just received a message from heaven that the Saviour was to appear on earth at twelve noon to-day, and he was to attend him. He became restless and excited during the rest of the day, and more so as the evening advanced. At bedtime he had 20 grains given him in half a tumbler of porter, and this has been repeated as often as the exalted delusions and other symptoms return. These exalted delusions, commonly called mental, are as much physical, and the result of diseased action in the membranes, convolutions of the brain and central ganglia, as the diminished sensation and motor power

are the result of softening of the cervical and dorsal portions of the spinal cord.

This remedy has been found equally useful to the patients who are permanently confined to bed; who are perfectly helpless, but who are noisy, and can destroy bedding with their fingers and teeth; and my present impression is, the more helpless the patient is, the less does he require of the medicine, if it be given whenever he begins to give evidence of an inclination to be noisy.

In the cases mentioned the daily average quantity of chloral given, instead of increasing has diminished, while keeping up the hypnotic action by night, and quiescent state by day. This class of patients was previously treated in a great measure by constant and careful watching, by digitalis alone, or in combination with hydrocyanic acid; by hypodermic injections of acetate of morphia; by belladonna, hyoscyamus, oxide of zinc, bromide of potassium, stimulants, and plenty of exercise. Good nights were in many cases procured; but I could point out several instances where no treatment availed, and even the stormy and rugged path to the grave could not be calmed or made smooth. Careful watching and nursing are as necessary as ever, but with the assistance of chloral it is comparatively made easy. The second case mentioned above was, before the administration of chloral, a most troublesome one. Digitalis, when given, calmed him for the time, but acted as a powerful depressing agent. Hypodermic injection of acetate of morphia, although it caused sleep, produced great irritation of the stomach next morning, so that it had to be discontinued. He was also very destructive; now he is quiet, easily managed, has gained flesh and strength, and certainly can walk better.

From the rest induced in one and all, a great change for the better has taken place, and I am able to say, in one word, that during the last four months not a rag has been torn, nor an article of furniture destroyed. In the cases under consideration the bowels, as a rule, were obstinately constipated, there being a total want of peristaltic movement, requiring turpentine enemas twice or three times a week, as well as the frequent introduction of the catheter; since they have been brought under the continued influence of chloral, purgatives are seldom used, and no

catheter has been required, nor have I found it necessary to feed any of them by stomach-pump. I do not ascribe the good change to any direct curative action of the medicine, knowing as I do now some of the more important pathological facts connected with this disease when once it has made progress; but I attribute it to the improved rest by night, and calming influence by day, together with the arrest, in a great measure, of the constant waste, not only of the nerve-tissue, but of all the tissues. Exhausting exercise or labour of any kind is, in my opinion, very hurtful; the quieter a patient can be kept the better. Whether this treatment can be carried out for any lengthened period, and if so, whether it will be attended by extending the lives of such patients, remains to be seen. I shall anxiously await the result.

It sometimes happens, but not frequently, that chloral given in the morning does not have its full influence until the night, and what is given during the night does not act until the following day. And this makes me more careful in giving it to those who have been taking it for a lengthened period. In the first case given, prostration was observed on the 20th of June, on the one hundred and second day, after taking an average of 23 grains daily. In such cases, when the patient cannot give any information, it is difficult to distinguish between the sudden state of partial syncope, which is common and peculiar to softening of nerve-tissues, and which in almost all cases precedes epileptiform convulsions, and the prostration caused by chloral. There is such a thing as chloral influence, or saturation of the system by chloral; for the patients who, before it was given, were night after night noisy and destructive, since they began to take it go several nights without requiring it, and still the calmative influence is continued, and if given on the first symptoms of restlessness, a small quantity seems to induce sleep. The last-named patient was evidently affected by it after it was discontinued on the 20th June, as he was perfectly quiet and sleepy during the following four days. There were no other decided symptoms besides the prostration; the face was pale, extremities cold, pupils natural, respirations and pulse not changed. I have given it in enema by the rectum, but I have not found any advantage in so doing, as the patient who, as a rule, was calmed by 20 grains, when taken by the mouth,

required 30 grains when injected into the rectum. Recourse can be had to this way of administering it when a patient refuses to take it by the mouth. It would be a great advantage could it with benefit be injected hypodermically in insane patients.

Hitherto there has been no difficulty experienced in the patients taking it. Some have taken it in brandy and water, some in simple water and syrup, others in porter, and the majority in bread and milk. I am inclined to prefer the stimulant, as practically I have found that patients taking it in this way have slept well, and the calmative after-influence was satisfactory; and the stimulant may prevent symptoms of prostration. It is recommended to administer brandy before giving chloroform; and if chloral be converted in the system into chloroform, the stimulant should counteract temporary symptoms of prostration. I make it a rule to feed those taking it when awake during the night.

It has been stated that chloral diminishes the temperature of the body during sleep. Now to decide this question may appear a very simple matter, but I have been for the last three months attempting to settle this point, and I have not been able to do so. These patients sleep so very light, that the least touch rouses them up. I am satisfied that when as much as 15 grains are taken, or even 30 grains, and sleep is not produced, it acts as a stimulant, the temperature rises and so does the pulse, the number of respirations is increased at the same time. I am of opinion, although I have not been able to prove it by thermometrical observations, that in every one the temperature is diminished during sleep, taking into consideration the anæmic state of the brain and nervous system as a whole. In a general paralytic, who took chloral for seventeen days daily (20 grains), average morning temperature was 97·15; average morning temperature without chloral, 98·5; evening temperature when taking chloral, 98·; evening temperature without chloral, 99·20. The average morning temperature in the third case described in this paper, when taking chloral, was 96·20; average morning temperature without, 97·5; average evening when taking chloral, 97·5; average evening, not taking chloral, 98·5. Taking the temperature in patients labouring under dementia an hour

before chloral was administered, and taking it an hour after the dose was taken, there was found no difference.

I think I have said sufficient to show the great advantage to be derived from the careful administration of the hydrate of chloral in paralysis of the insane. That the temporary use of it has been of much good cannot be denied by any who have observed its action, and I shall continue to watch with much interest the different patients who are rendered calm under its influence.

A troublesome class of patients are those who are subject to periodic attacks of mania complicated with hallucinations of hearing and illusions of sight. The more mental aberration there is in the intervals, the more are these patients under the domineering influence of the voices; they lose all control over themselves, and act as they think they are told. For instance, a man suddenly sees, according to his ideas, the devil standing before him, who directs him to commit suicide. The attack is noticed coming on, and the patient is placed under observation; but while the watch is attending to another patient, he cunningly and stealthily slips out of the ward, breaks a pane of glass, and inflicts two deep wounds under the pomum Adami: it is the work of a moment. He is brought back to his bed, raving and resisting with all his might, and the master under whose iron rule he is for the time being is standing before him inciting him not to submit. The wounds are dressed, and he is forced to take 35 grains of chloral, and in a short time he is sound asleep, and next morning he has forgotten all about the previous evening, and becomes as quiet as a lamb. On previous occasions when under the influence of the voices, and treated by purgatives and hypodermic injections, the attack continued for several days. In order that he may be kept perfectly quiet, that the wounds may unite, he is kept under the hypnotic action of hydrate of chloral by night, and its calmative influence by day, taking daily 25 grains for sixteen days—10 in the morning and 15 at bedtime. The wounds unite without a bad symptom; the dressings consist only of lint soaked in weak solution of carbolic acid 1 to 50.

Chloral will not prevent these attacks unless the premonitory symptoms are observed; and if they are, I am under the impression that they may be prevented by giving from 30 to 40 grains,

so as to throw the patient into a deep sleep. There is sufficient evidence that they may be cut short. I have found chloral to be an excellent remedy in all instances of patients influenced by voices periodically with excitement, as they very soon become quiet and calm. To patients who are troubled with voices incessantly but not influenced by them, being aware that they are hallucinations, chloral has been given with the hope that it might destroy the undue sensibility of the nerve-tissue affected. The voices were most troublesome an hour after dinner, and during the night when awake; 5 grains were given at 4 P.M., and 15 grains at bedtime. After a few days the voices became softer, more distant, and not so constant, and the patient's nights more agreeable when awake; but no complete cessation has as yet taken place. Such a patient is now under treatment.

In patients who periodically attempt to maim themselves chloral has been found of the greatest advantage, as under its action the inclination passes away.

One of these patients has an irresistible desire to strike the back of his hands against the wall of his cabin or the sides of his cradle by night, and by day he is found picking them with his nails or a sharp stone, until he makes the whole surface raw and ulcerated. Giving 15 grains morning and evening for a few days prevents his going on with it.

Another, who is periodically violent, whose propensity is, when in that state, to break windows (and break them he will in spite of all watching), had his last attack, the previous ones having been invariably of ten days' duration, cut short in three days by giving 15 grains at bedtime; and, what is more astonishing, became a good working hand. It would appear that any prominent propensity under the influence of chloral vanishes away for the time, as the tide blots out marks on the sand, and does not return until the same predisposing cause produces a return of it. In these cases the tendency to mischief seems to be preceded and accompanied by disturbed rest; and it is to the refreshing sleep caused by the medicine, without disturbing the ordinary functions of digestion, that the good results are to be imputed. Rest is everything to the nervous system of such patients.

In a case of melancholia with dementia, when the patient

was very restless, wakeful, and refused his food, chloral did good, inasmuch as sleep returned, and he fed himself instead of requiring to be fed by the attendant. In melancholia with religious formation of ideas, with extreme depression, the intellect being good, in which it was of the greatest moment and importance that the rapidity of thought, with its accompanying feeling of utter despair, should be arrested, and in which the imagination was vivid, and the individual recalled the whole past history of his life, and every act was reviewed and examined from a despairing point of view, all adding to his condemnation, although chloral produced good sleep at first, and for a time while under its influence cut short the train of ideas, giving a momentary ray of hope to the patient, yet when its restraining influence had passed away, the same process of reasoning became more rapid, and the feeling of despair more intense. After a time sleep seemed to be repelled. The patient's depression followed a lingering fever which evidently left an abrasion of the mucous membrane of the stomach; as there was morning retching, and bloody mucus was vomited with an occasional clot. One morning during the retching, having taken 60 grains of chloral during the previous twelve hours, sudden paleness of the face, cold extremities, and great prostration, with cramps in the legs, supervened. The ordinary brandy mixture of the Pharmacopœia was freely given, and the patient soon rallied; but the chloral was discontinued, and small doses of acetate of morphia injected into the arm, which, with a free diet, answered well.

Under the taking of the chloral the blood completely disappeared from what was ejected by the stomach, and the retching gradually ceased. If it should turn out that chloral has the power of contracting the capillary vessels on the surface of mucous membranes, the fact will be worthy of attention. Chloral in this case was given every night, and sometimes during the day, for three weeks: for the first week in doses of 20 grains, gradually increased during the next fourteen days to 35 grains. On the last days 60 grains were taken. In melancholia, when the delusions of the individual have been of the religious type, and confined to one or two leading delusions with a complete want of sleep, under chloral sleep returned, and the patient became convalescent.

All the above facts force one to conclude: 1. That in paralysis of the insane, where the patients are destructive and violent, the judicious administration of chloral acts as an excellent hypnotic by night and soothing agent by day.

2. That under its action the patients have been free from destructive habits, and have gained in weight and strength.

3. That in one case as much as 2,810 grains were taken during ninety-five days, the daily average taken being 30 grains, with no bad symptoms. In a second case as much as 2,435 grains were taken during 122 days, being at the rate of 22 grains daily; when the patient gave evidence of prostration. A third patient took 2,380 grains during eighty days, the daily average being 28 grains, with no bad symptoms. A fourth patient took 1,362 grains during sixty-seven days, the daily average being 20 grains, with no bad symptoms. A fifth patient took 501 in twenty-four days, giving a daily average of 25 grains, with no bad symptoms.

4. That under it the action of the bowels and bladder have improved.

5. That in no case has there been a refusal of food; on the contrary, the appetite of the paralytic patients increased.

6. That patients suffering from abnormal sensation derived much benefit from it.

7. That in patients subject to hallucinations of hearing, with suicidal tendencies, it has cut short the hallucinations.

8. That in patients liable to hallucinations of hearing, and under their influence becoming excited and noisy, it has produced calm.

9. That in patients with a propensity periodically to maim and hurt themselves, the desire has passed away under the influence of chloral.

10. That in patients who suffer incessantly from voices, it has been given with partial benefit only. This refers to patients who were aware that the voices depended on morbid sensations.

11. In certain cases of melancholia benefit was derived from its administration, and convalescence advanced.

12. That in another case of melancholia with extreme depression, and the intellect being good, no permanent benefit was derived, except that under its administration the bloody exudation from the stomach completely disappeared.

13. That the greater the disorganization of the brain and cord (as judged by the symptoms, and especially by thermometrical observations) the sooner does the system come under chloral action.

I have not given the thermometrical observations, as they would make the paper too long.

In these remarks I am fully borne out by the assisting staff surgeon of the hospital, Dr. Wheeler, who has with me carefully watched the progress made by the different patients under treatment.

ON THE TREATMENT OF HÆMOPTYSIS, WITH REFERENCE ESPECIALLY TO THE EMPLOYMENT OF STYPTICS.

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Among many problems in therapeutics awaiting solution upon a basis which is satisfactory to the scientific inquirer, and therefore due to the claims of legitimate Medicine, stands the question as to the value and *modus operandi* of styptic agents when given internally. They are constantly made use of, and both the routine of practice and popular demand tend, I believe, to encourage their employment with unnecessary frequence.

I propose to discuss briefly in this paper the practice of treating hæmoptysis with styptic remedies.

In estimating the value of any special plan of treatment, it is, of course, necessary to pay especial attention to the cause and tendency of the morbid condition or symptom we try to rectify or relieve. In the more apt language of my distinguished former teacher, Professor Hughes Bennett,[1] "a correct pathology must ever precede scientific therapeutics."

With regard to hæmoptysis then, we find that in the great majority of cases it is a symptom of pulmonary consumption. The occasional bleeding from thoracic aneurisms,[2] and those arising from pulmonary congestion, secondary to heart-disease, may be said, practically, to call for no interference with styptics; neither do the occasional small hæmoptyses which occur in the course of chronic bronchitis and emphysema. It is, however, a question with some whether the hæmorrhage in pulmonary apoplexy should be restrained. The late M. Trousseau advised

[1] Lect. Edin.

[2] *Vide* Gairdner, Clin. Med. p. 524.

the use of ipecacuanha in these cases, and wrote favourably of it. [I cannot myself see that it is desirable to check the *expectoration* of blood in such a case, though any remedy that would prevent hæmorrhage into the texture of the lungs might justly be extolled.] Passing by the comparatively rare cases of cancer and hydatid of the lungs as affording causes for hæmoptysis, we are left mainly to deal with that arising from phthisis; and in reviewing the causes and results of this accident it is proper, in the first place, to bear in mind that death directly from it is the rarest of occurrences. During the largest hospital experience of the last twelve years, I have myself only seen one death from this cause. An accurate diagnosis should be made so far as is possible. It is certainly wrong to percuss the chest, or make any such physical examination of it as entails movement or disturbance to the patient. The bleeding is usually from small bronchial, arterial, or from pulmonary venous branches, eaten into by ulceration. It is always recognized as from these sources, unless the blood be distinctly venous in appearance, when, as most rarely happens, a branch of the pulmonary artery has ruptured.[1]

I believe that a large number of cases of simple hæmoptysis require no medicinal treatment whatever. The occurrence is often so regulated as to be what we may call self-limited; that is, a vessel or some small vessels rupture, they bleed for a time, and they cease to bleed. The analogy in this respect, I believe, between such a breach, and a similar one elsewhere on the body, is not so distant as may be at first supposed. Many cases of pulmonary hæmorrhage terminate in this way. In the meantime there may have been wise or unwise measures employed to check the process, and these are not unlikely to win credit for the satisfactory result. I need hardly say here that this is no evidence whatever to us as therapeutists.

How often, indeed, are practitioners summoned to cases of hæmoptysis, and on arrival find there is nothing for them to do. The patient's condition in the meantime may have been most inconducive to the result. He is perhaps found lying on a

[1] Difficulties arise sometimes, however, as when an aneurism leaks into a bronchus, or, rupturing at the same moment partly into a bronchus and partly into another channel, does not cause death for many hours.

warm feather bed, in a close room, surrounded by anxious attendants. Perhaps the only favouring circumstance in a somewhat severe case may have been the partially syncopal condition, induced by alarm at the sight of blood, which moderated the cardiac action.

Nothing beyond rest and suitable hygienic practice is called for; but if there be interference with medicine, the result will be perhaps set down to the particular drug employed. There is no doubt that many agents have not only gained, but maintained a reputation as hæmostatics on the credit of cases similar to the above. And, indeed, if we boldly survey the whole field of therapeutics, we find the same sort of faith to prevail only too largely.

So much then for those cases, a large number as I have stated, requiring no interference with drugs. We are compelled, however, to treat a hæmoptysis which does not cease spontaneously.

It is first to be borne in mind that, with perhaps one exception, to be presently mentioned, we are not in possession of the means to effect a change in the vascular walls in a short period of time. Some hæmostatics no doubt act rapidly by altering the relations between the blood and the vessels.

"In all cases," remarks Professor Bennett,[1] "the best remedy is perfect quietude, and avoidance of every kind of excitement, bodily and mental. Astringents have been recommended, especially acetate of lead and gallic acid; but how a few grains of these remedies, introduced into the stomach, can operate upon ruptured vessels in the lungs, I am at a loss to understand; and I have never seen a case in which their administration was unequivocally useful."

This is a bold assertion as to styptic drugs, but in the class of cases we are now considering, I believe it will not deter the practitioner from interference. It is my conviction that we are warranted by the results in employing certain drugs in severe and prolonged hæmoptysis. It is perhaps too much the habit to give opium and powerful astringents in these cases. To be of any use, ℈j to ʒss of gallic acid should be given every half-hour at first, or gr. ij to v of the acetate of lead as often. The result of such medication, in many instances, is so to disturb the digestive powers and nutritive processes as to throw back the patient,

[1] Pathol. and Treat. of Pulmonary Consumption. 2d Edit. p. 147.

and render the hæmorrhagic attack altogether a very severe accident for him.

I believe the value of opium in hæmoptysis to consist, not only in its general calmative powers, diminishing irritability and checking cough, but also in its local tonic action upon the small vessels. That continued doses of acetate of lead produce a marked effect upon a ruptured vascular surface, I entertain no doubt. We are, it is true, met with the difficulty of supposing that a few grains introduced into the mass of the circulation—say gr. x to lb. 15 of blood—should act in so decided a manner. "We must remember that though only a minute quantity at a time is presented to the injured capillary, that quantity is continually succeeded by others as the course of the circulation passes over the part. Lead is absorbed with ease, excreted with difficulty. It diminishes the red corpuscles, and thus directly counteracts the hæmorrhagic diathesis." [1]

I believe, however, that in many cases we may dispense with this remedy, as also with gallic acid, in favour of the more simple plan I shall now mention. On the occurrence of continued hæmoptysis all other remedies should be withheld, and a simple astringent or slightly aperient medicine given. A good form is ℥x to ℥xv of dilute sulphuric acid, and, according to the state of the bowels, ʒss to ʒj of sulphate of magnesia may be given with this in some spearmint water every half-hour at first, and then less frequently. In addition to suitable posture (semi-erect), and other well-known favouring conditions, absolute silence should be enjoined, and the patient urged to refrain from coughing as much as possible. Should the bleeding continue, we should place a bladder of ice,[2] or a frozen compress,[3] between the scapulæ for a short time. This sometimes acts promptly, no doubt by reflex action, and probably this is the only means whereby a rapid change can be induced in the vascular walls. Should this fail, tinct. digitalis should be given (℥x or xv) with each dose of the astringent saline. In addition to this, if the case appears obstinate, a blister should be painted on the front

[1] Dr. Headland. Extract from private letter on the subject. 1864.
[2] Walshe, Disease of the Lungs, 3d Edit. p. 427.
[3] Niemeyer, Text-book of Practical Medicine, Amer. Transl. vol. i. p. 152.

of the chest, if possible under the clavicle of the side believed to be affected.

The ordinary habits and remedies may be resumed in a day or two after the cessation of the hæmorrhage.

The above description comprises the most beneficial method which I have witnessed, and, in setting it forth here, I need not say that there is no novelty in it. I do believe, however, that it deserves to be employed more frequently instead of the medication with opium and powerful astringents.

Of the value of ergot, turpentine, and common salt, remedies frequently employed and lauded, I have no experience. I imagine the actions of opium and ergot are not dissimilar as regards their effect on the small blood-vessels.

Digitalis has fully vindicated its right to a high place in our list of hæmostatics. It is believed to produce its effect independently of any action on the circulation. Dickinson[1] suggests that it influences the muscular fibres of the uterus in cases of menorrhagia, in which it is of great value.

Ipecacuanha enjoys considerable reputation as a hæmostatic, especially in the Parisian school. I think the following experience of it in hæmoptysis worth recording in this place. I employed it in two bad cases, and watched its effect in a third. In only one of these was the result satisfactory.

Case I.—A farm-labourer, aged 21, admitted into hospital with a second attack of hæmoptysis, which had persisted for five days. Sufficient evidence of mischief was elicited at the left apex. I gave him gr. ij pulv. ipec. 4tis horis. This caused only slight nausea. Next day, hæmoptysis continued. Ordered gr. v 4tis horis. This caused vomiting, but was persisted with. Hæmoptysis not checked. A blister under the left clavicle was of no service. The bleeding ceased gradually in two or three days, the patient taking, in the meantime, sulphuric acid and digitalis mixture.

Case II.—J. P——, aged 35, Royal Dockyard policeman, was admitted into Plymouth Hospital with severe hæmoptysis. Known to be a subject of chronic phthisis for last three years. Ordered by the late Inspector-General, Dr. Stewart, ʒij vin. ipec. (= circ. gr. v pulv. ipec.) secundis horis. This caused vomiting,

[1] Roy. Med.-Chir. Trans. vol. xxxix.

and the remedy was suspended in favour of gallic acid, which failed, and was replaced by sulphuric acid and digitalis mixture, which likewise was of no avail. [The man died purely from hæmoptysis and syncope in three days, and on examination I found several bronchial ulcers in the left apex, communicating with branches of (probably) the pulmonary vein.]

Case III.—Out-patient, aged 64, hale-looking man ; had suffered for some days with hæmoptysis. Physical signs *nil*. To take ℥x vin. ipec. (= gr. ss) ter die. No benefit derived in a week, when gr. v of gallic acid were ordered ter die. Next week, hæmoptysis no better (blood was brought up in my presence) ; to take gr. iij pulv. ipec. ter die. On the second day of this treatment, the hæmoptysis ceased completely. The powder was taken till the fourth day, when it proved purgative, and was suspended. No nausea was produced. In six months' time, no change in condition of chest, and no further hæmoptysis.

In two of the cases nausea occurred. Trousseau maintained that neither this nor actual emesis interfered with the good result. One naturally fears the disturbance to the circulation in vomiting, but this circumstance is not proved to contra-indicate nauseant remedies. The styptic action of ipecacuanha, if it really exist, is not yet explained. I have elsewhere shown that the theory of its bleaching the lungs is untenable, and that these organs, on the contrary, are found full of blood after its use.[1] I am disposed to believe that this drug does not act similarly on all individuals, and that, just as the dust of it excites an asthma in some persons, and is harmless to the air-passages (in small quantity) of others, so the nervous arrangements of some may be more susceptible to its action. Laycock believes that it excites a similar contraction in the vascular to that which it promotes in the bronchial tubes of some persons.

The hæmostatic actions of nauseant remedies are perhaps partly explicable by the calmer state of circulation they induce.

In many cases, I believe, we may bear in mind the opinions of the late Dr. Theophilus Thomson,[2] and other authorities,

[1] St. Barth. Hosp. Reports, vol. v. 1869.

[2] On Pulmonary Consumption, 1st Edit. p. 35.

which teach that oftentimes in phthisis moderate hæmoptysis is useful, and seems to retard a fatal issue.

In conclusion, I would make one or two remarks as to the blame which is sometimes set to the account of steel and cod-liver oil in causing hæmoptysis in cases of phthisis.

Cullen[1] forbade the use of ferruginous medicines as styptics, because they "contributed to increase the phlogistic diathesis of the system;" he also condemned Peruvian bark for the same reason.

There are those who deny the truth of this, and consider that even if such were the case, no harm would result. I suppose few remedies are more largely employed. If iron be withheld from the cases where there are manifestly present pyrexial symptoms, hardly any complaint could be made.

In these instances the remedy is unsuited, and quinine replaces it with much advantage. And so with cod-liver oil. It is not, however, possible in every case to say whether one or the other will positively prove harmful, and the truth in the matter is, I believe, comprised in the following, which is the experience of my colleague, Dr. Andrew, viz. that both steel and cod-liver oil do cause hæmoptysis in a certain small number of phthisical patients, who, therefore, cannot take these remedies. The greater number, however, bear both well without any such occurrence being fairly chargeable to their use.

[1] Works, edited by Dr. Thomson, vol. ii. p. 238.

ON PAIN AND ITS TREATMENT.

BY J. P. ATKINSON, M.D., ETC.

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THE existence of pain presupposes the existence of:

1. A brain (to appreciate pain).

2. A chain of nervous matter (to convey the sensation of pain to the brain).

3. Arterial blood circulating in and around the nervous centres (to give the nervous matter life to enable it to convey the sensation of pain).

It cannot under any circumstances occur, if one of the conditions be absent. Cut off the supply of blood to the nervous system, and no impression can be made upon it; cut in two the nervous connection, and the sensation of pain cannot be conveyed to the brain. Remove the brain, and there can be no appreciation of pain.

The following circumstances generally give rise to more or less pain :—

Increased activity of brain and nervous system, owing to increased electrical action, or alteration in the quantity or quality of the blood. Increased supply of blood dependent on nervous irritation. Pressure on a nerve. Excessive muscular exertion. It is accompanied by excess of blood, both in the part and in the brain, and uses up vital force more rapidly and wastefully than muscular and intellectual work. The restoration of nerve tissue which ought to go on during sleep is suspended, waste products accumulate, and thus the nutrition of the nervous system is affected in three different ways: there is increased waste, increased accumulation of waste, less repair; digestion

becomes impaired, and the various secretions disordered. Pain indicates that there is a disturbance of the harmony which usually exists in the body, and that the part or organ so complaining has been unduly exercised, and is in fact suffering from exhaustion. Excite the heart's action too much, exercise the brain or muscular system too much, and pain is the result. In the production of local anæsthesia, very sharp pain is experienced just before the nerves begin to lose their vitality. This is due to the extreme nervous tension produced by the action of the cold, and is an exhibition of fatigue. The pain felt in wounds produced by bruising is the result of the nerve-power being diminished, and the tissues pressed upon by the products of extravasation. Extreme mental anxiety is a condition allied to that produced by excessive muscular or nervous irritation (it is, as it were, mental pain produced by over-exertion of the brain), and the same symptoms are induced since the brain is incapable of engaging as hitherto in calm thought and reasoning. The various agents which tend to produce pain in increased intensity cause death. Since pain is coincident with the occurrence of inflammation, it follows that the nervous system must be, to a greater or less extent, concerned in its production; and in order to show what share it really does take, I will describe the three stages of inflammation thus :—

1. Irritation of nerve, causing contraction of capillaries in the part, and increased rapidity of circulation.

2. The nerve by continued irritation begins to lose its controlling force over the vessels. The capillaries gradually dilate, the blood circulates more and more slowly, and by degrees the corpuscles adhere to the sides of the vessels. The tissues in the immediate contiguity appear to assume a much greater attractive force, and to lose their previous power of selection.

3. Increased paralysis of nerve, complete stagnation of blood, effusion of serum into the surrounding tissues.

Dr. Radcliffe and Dr. Anstie divide painful inflammation into two classes :

1. Where the pain lasts only during the preliminary stage of inflammation.

2. Where the pain persists after the second stage has commenced.

In the latter, the tissues are subjected to compression, friction, or stretching. Before beginning to speak of the treatment of pain, I would remark that health is a condition in which every organ of the body performs its functions in a proper and efficient manner, and one which tends to afford its possessor true mental felicity. Though there may be, and are various signs of health, it is folly, under any circumstances, to speak of it as excessive. Health is the very highest point we can reach, and all deviations from this must be in a downward direction. From this it may easily be inferred that the chief things I would advise for the restoration of nerve-power are rest and support. The latter must always be administered in such a form as is compatible with the weakened state of the digestion. In cases of extreme mental distress, accompanied by insomnia, where the *fons et origo mali* is the brain, I would recommend such articles of food as corn-flour, bread and milk, eggs, and beef-tea, more especially the first two. If stimulants are required, the best are ammonia, tea, coffee, &c. Rest is most readily obtained by the bromide of ammonium or potassium, or the hydrate of chloral. Where the cause of the pain is eccentric, or dependent upon a disordered state of the blood, I would suggest the employment of alcohol in preference to the stimulants mentioned above. It should be repeated often, and in small quantity. Flushing of the face, increased temperature, quickened pulses with increased dicrotism, the appearance of alcohol unaltered in the urine, are one and all indications that it is being given in excess, while the opposite of these symptoms are indications that benefit is resulting from its use. Here opium clearly shows what it can do in restoring nerve-power and procuring rest. It may be applied either locally, or given internally. Hypodermic injection is certainly a very valuable way of administering sedatives; occasionally, where the hypodermic injection of morphia and atropine fails, an amelioration is quickly obtained from a series of blisters and applications of morphia to the denuded surface. In some cases, atropine, morphia, and tincture of aconite, when mixed with chloroform, and simply applied to the skin, seem to afford as much ease as when they are used hypodermically. Some attacks of brow ague are instantly and permanently relieved by local anæsthesia. Local stimulants also occasionally effect a great

deal of good. As regards the medicinal treatment of pain it may be said in few words to consist in the administration of nerve tonics with sedatives: thus, for neuralgia, quinine, arsenic, or chloride of ammonium are generally prescribed with belladonna, colchicum, conium, lactuca, or cannabis indica; for neuralgia of the testis, perchloride of iron. Hemicrania is almost always benefited by muriate of cinchonine or iodide of potassium. The twitchings that accompany locomotor ataxy are generally relieved by nitrate of silver in combination with belladonna. Numerous other instances might be given where nerve tonics and blood restorers are prescribed for the relief of pain; but these I think are sufficient to show the correctness of what I have stated above.

ON THE USES OF WINES IN HEALTH AND DISEASE.

BY THE EDITOR AND STAFF.

PART II. ON WINES IN DISEASE.

Section I. Wines in Acute Diseases.

THE questions which we have to discuss, in considering the uses of wines in disease, are much more numerous and difficult than those which we dealt with in speaking of wine as a beverage in health; and if we expend comparatively fewer words in discussing them, this will arise from the fact that our knowledge is here very much less extensive and accurate, so that we can but present an imperfect outline of the subject. We believe, however, that some important principles, which have never as yet been expressly laid down, may be gathered from a systematic study and arrangement of the facts already known to practical physicians.

We propose in the present paper to deal with what is by far the most important portion of the therapeutics of wines; the use, namely, of these liquors in acute diseases. A few preliminary words are necessary, in order to define the class of maladies which we include under this title.

Acute diseases, as we understand the word, are affections in which danger to life, or notable damage to tissue, is rapidly produced; or in which, at any rate, marked and characteristic trains of symptoms are quickly set up. They are divisible into two chief groups, as regards their relation to alcoholic treatment, viz. the febrile and the non-febrile.

1. The febrile acute diseases include the exanthemata and the other epidemic fevers, and also the acute inflammations, whether primary or supervening on injury or surgical operation, or complicating a previously existing disease.

In commencing the discussion of the use of wines in febrile acute disease, it is necessary to say a few preliminary words as to the circumstances which induce us to prescribe alcohol at all in such maladies. Not to occupy space with unnecessary detail, we may say broadly that the combination of high temperature, especially when persistent, with delirium or other evidences of nervous prostration, great rapidity with a high degree of dicrotism of the pulse, and especially a tendency of the latter to become unrhythmical in such a manner as to show rapid and irregular changes in the *force of the heart-beats*—all these strongly indicate the use of alcohol, and when they manifestly diminish under the influence of our first experimental doses we are confirmed in our opinion. Again, there is a class of inflammatory affections, chiefly represented by pneumonia and bronchitis of the aged, in which all the other symptoms above mentioned may be present without the high temperature, in which also alcohol is strongly indicated. The safest guide beyond comparison to the use of alcohol in all acute diseases is the condition of the pulse: the existence of marked dicrotism with great rapidity, especially when combined with any irregularity, is a far truer indication than any consideration derived from the stage at which the illness has arrived.

With regard to most of the acute febrile diseases, it may be said that alcoholic liquids are to be prescribed primarily, if not only, for the sake of the alcohol which they contain; the only other points of consequence being that the other ingredients of the liquor shall be harmless to digestion. For the most part, then, we shall simplify matters by ordering plain spirit properly diluted with water in these cases; and the use of wines is unnecessary. This is especially the case where the febrile temperature runs high persistently during several days; and, generally speaking, in the early stages of severe pyrexia which is to last for some time. The distinctive uses of wine in acute febrile disease are of a different order, and may be divided under two heads. The ethereal constituents of wine have a special value in the later stages of severe febrile disease with great exhaustion of the heart, especially when combined with sleeplessness. On the other hand, a low alcoholic strength of wine, together with the presence of carbonic acid, as in the finer effervescing wines, is particularly useful in cases where the

violence of the fever, the nervous prostration, and the derangement of digestion are out of proportion to the gravity of the case as regards danger to life and continuous destruction of tissue.

(1.) A most important and too little recognized distinctive indication for the highly ethereal wines is to be found in the condition of cerebral and cardiac exhaustion which is so well seen, for instance, in the third and fourth weeks of a severe case of typhoid fever. Here the chief danger unquestionably arises from the weakness both of the nervous and muscular forces of the heart. The special combustive processes have for the most part spent their force ; the danger is from the failure of the heart. Under these circumstances we shall, I believe, do best by throwing aside brandy, unless we can procure the most *recherché* kinds, which are rich in ethers, and betaking ourselves to the use of the finest old port or sherry, or to some of the more excellent qualities of Rhenish or Hungarian wines. From six to twelve ounces per diem of fine old sherry, or from eighteen to twenty-four ounces of the Hungarian wine known as dry Ruster, given in divided doses at intervals of half-an-hour, affords the ideal stimulant required under the circumstances ; it is surprising how rapidly this treatment at the same time restores strength and regularity to the heart's action, and calms the nervous system, so as to allow of sweet and restorative sleep. It is useless here to think about cost ; the very finest wine that can be procured for money is just that which will procure the effect we desire with the least possible delay. The physicians of the Westminster Hospital have had abundant opportunities of observing the effects in such circumstances of a very splendid old sherry, of which the late Duke of Northumberland presented a large quantity to the hospital ; and for our own part we are convinced that the influence of such a liquor is something entirely distinct from that of its mere alcohol.

Another instance of acute disease in which profound exhaustion threatens a disastrous failure of the heart, is that form of insanity known as acute delirium. We can hardly express too strongly our sense of the superiority of highly etherised wines to merely potent alcoholic liquids in these cases. We have been informed by alienist physicians, whose larger expe-

rience only confirms our own, that the calming and reviving influence of such wines as we have just referred to is of inestimable value. In such cases there is commonly no very great elevation of temperature; but everyone who has seen much of this terrible form of disease must be aware with what alarming rapidity the nervous system and the heart succumb. It is by no means always necessary to give large quantities of the stimulant. Sometimes a very few glasses will suffice to restore the patient to a condition in which he becomes willing to take those supplies of food which are of the first importance for his safety; and, above all, the efficacy of this treatment in inducing sleep is of the utmost consequence to the patient. In short, though alcohol as such seems to have little influence over the progress of these cases, it is quite different with the effect of wines of the highly etherised class. It is not asserted for a moment that their effect is specific; like everything else, they will often fail to do good; but it may safely be said that, with the exception of food, chloral, and occasionally of bromide of potassium, nothing offers so good a prospect of success.

The general result to which the best observation we have been enabled to give to this subject during a good many years of special study has led us, is as follows:—We believe that the administration of potent alcoholic liquids is especially appropriate to the period of severe and persistent febrile disturbance—in fact, to the early, or at any rate the middle period of acute febrile disease; and that if this treatment be judiciously adopted, the ultimate stage of cardiac exhaustion is often mitigated or entirely prevented. But if once this stage of exhaustion be reached, we believe that the largest doses of alcohol as such will be unable to restore the flagging power of the heart; whereas a wine of comparatively feeble alcoholic strength, but rich in volatile ethers, will often prove marvellously efficacious in sustaining the nervous power of the heart till its enfeebled muscular tissue shall have had time to repair itself.

(2.) There is a very different set of circumstances in which febrile symptoms may call for the administration of wine; viz. the catarrhal inflammations, the ephemeral form of catarrhal fever, and the true contagious influenza: in all these wine is not unfrequently useful, but we are convinced that the weak

effervescing kinds are the really valuable form, while the more strongly alcoholised varieties as often do harm as good.

To take first the case of catarrhal inflammations; it is possible, we believe, to establish an ascending scale of suitability for wine treatment. Catarrhal inflammations of the stomach rarely either call for, or tolerate, alcohol in any shape: but occasionally when they occur as part of a general catarrhal affection which involves a considerable amount of prostration, a moderate quantity of sparkling wine may be given with advantage.

Somewhat more frequently is this kind of wine useful in the catarrhal diarrhœa—the acute intestinal catarrh—of summer and autumn. In the majority of such cases no alcohol is required; the patient needs only to limit himself for a short time to a system of eating very small quantities of food (not necessarily mere slops) at short intervals, and preserving rigidly the recumbent posture. If any irritating food requires removal from the bowels, a mild rhubarb purge will be useful; and if any further medication by drugs be found necessary, opium, with or without mineral acids, will commonly do best. But if the diarrhœa obstinately continues for several days, as is especially apt to occur when the patient cannot keep the recumbent posture, but must move about more or less, then the greatest benefit will often result from putting him upon a ration of ten or twelve ounces of champagne daily, discontinuing all medicines. If the patient can afford it, some good turtle-soup is an excellent addition to this fare.

Still more marked is the good effect of light effervescing wine in that form of epidemic catarrh which is accompanied with low inflammation and ulceration of the throat, and which is apt to assume an epidemic form. The patient cannot bear to swallow solid food: yet he often gets low and depressed under even the most continuous feeding with milk, beef-tea, &c.; while on the other hand strong wine or brandy frequently proves heating, and increases his discomfort. Here champagne to the extent of a pint bottle per diem often most materially assists recovery, and, what is scarcely less important, it greatly relieves the sense of depression and misery.

There is a form of ephemeral catarrhal fever, which may

attack any one, but to which certain individuals are especially liable ; it may be induced, apparently, by almost anything which greatly depresses the nervous system, but its access is commonly precipitated by catching a chill, though the latter may be very slight. In such persons the attack is often attended for a day, or for two or three days, with such a considerable febrile heat as to alarm the bystanders, and to suggest the idea that one of the more serious fevers or inflammations is about to declare itself. The writer has had considerable experience of the treatment of this affection, and can assert, with much confidence, that it may be very effectively dealt with by a treatment consisting simply of, (*a*) perfect rest in bed, (*b*) a diet exclusively of milk, which may be drunk *ad libitum*, and (*c*) an allowance of a pint of light champagne in the twenty-four hours ; and this is the plan we would generally recommend. A single dose of opium at the very outset of the symptoms may sometimes arrest the attack altogether ; but if this fails it is best to dispense with medicine altogether, and simply follow the above directions.

Not less effective is this kind of treatment in many cases of true contagious influenza ; but where the disease is very severe, and threatening to life from acute chest complications, it may be necessary to feed generously with soup, and to allow eggs and brandy freely.

We desire to call attention to what seems a very important distinction between the kind of pyrexia which distinguishes the severe contagious fevers and the severe tissue-inflammations, and that which attends a large number of catarrhal affections. We believe that, whereas in the former group of cases the elevated axillary temperature, the flushed face, and sensibly burning skin are a true index of greatly heightened combustion-processes within the body, in the latter they are commonly in great part due to an *altered temperature distribution*, owing to more or less generalised *paralytic dilatation of the peripheral arterioles and capillaries*. If this be true, it has a most important bearing on the question of the administration of alcohol. Large amounts of the potent alcoholic liquids are, we believe, only required in those cases where there is evidently an amount and kind of pyrexia which can only be due to greatly increased processes of tissue-waste, or enormous cell-formation, or both. We do not mean to

say that even here we would counsel any routine employment of alcoholisation: here as elsewhere, we would make the quality of the pulse, and its behaviour under experimental doses, and, above all, the appearance or non-appearance of unchanged alcohol in the urine, the true guide to practice. But in the catarrhal fevers and inflammations, where we believe that the apparent elevation of temperature is so often deceptive, we recommend the use of alcohol, where it needs to be used at all, only in such small quantities and such a diluted form as to act mainly as a modifier of sensation and brain-function, relieving the tendency to cerebral stupor, and the painful aching of limbs, &c., which are so common; and for this purpose the effervescing form is especially adapted.

It is quite otherwise, again, in the true tissue inflammations, which tend to the formation of lymph and of pus within the substance of organs. Here, also, there is no routine principle for or against the use of alcoholic liquids; each case must stand upon its individuality: but the cases that do call for these liquids demand them, we believe, for the sake of their alcohol; and consequently there is no advantage in the use of wine over that of spirits, but rather the reverse, at any rate in the acute stages. According to the most recent information we must at least provisionally believe that alcohol subserves a double purpose in acute inflammations—(*a*) that it tends to check excessive combustion of tissues, and (*b*) that (as Binz shows) it checks the migration of blood-corpuscles through the vascular walls. It is only in the later and exhaustive stages of inflammations, especially of such as tell heavily upon the heart, that we find an indication for the highly ethereal wines: we may especially mention rheumatic pericarditis in this category. We shall not easily forget the remarkable effects which we saw in one particular case of this kind from the administration of a fine old Rhenish wine, highly charged with ether, and of magnificent odour; the feeble rapidly-flickering heart came back to a comparatively strong and steady beat, and the irritability of intense nervous prostration was wonderfully calmed. It is needless to say that for such a purpose as this no crude or unduly acetous wine can be tolerated; it would be the worst economy not to give the best that money can procure.

Before we conclude this present paper we must add a few words that should have been said above, respecting the administration of champagne in the catarrhal fevers and inflammations. The wine itself should be chosen with great care: it should have not above 6 or 7 per cent. of absolute alcohol, and at the same time be very dry; the presence of any considerable amount of sugar makes champagne quite unfit for the stomach of a fevered patient. One "pint" bottle will contain about 6 drachms absolute alcohol in such a wine as we are now recommending. We recommend that not more than half a champagne-glassful be given at once; but if the patient likes to fill up the glass with seltzer-water, and sip it more slowly, he can do so. It is a decided mistake to *over-ice* the champagne, but it should be moderately iced in summer weather. In temperate weather it should not be iced at all, but simply kept in a cool place, in water.

(*To be continued.*)

Reviews.

Thèse pour le Doctorat en Médecine. Par Mdlle. Elizabeth Garrett, *Docteur en Médecine.* Sur la Migraine. Paris: 1870.

It would be impossible, in any case, to pass without notice so striking an event as the appearance of the inaugural treatise of the first lady—an English lady, moreover—who has ever passed through the formidable ordeal of the examination for the Paris doctorate of medicine. But in fact the treatise before us needs no recommendation from the unusual circumstances under which it appears. It is a piece of scientific work which will be able to hold its own with the critics, and as well deserves the impartial study of the profession as any monograph on nervous disease which has appeared of late years. It is not the province of this journal to discuss medical politics, and we shall not pronounce any opinion as to the probability of lady doctors, in any considerable numbers, acquiring such a genuine knowledge of medical science as is displayed in Dr. Garrett's inaugural treatise; but we may at least say that we should personally be delighted to welcome as colleagues any number of ladies who should prove themselves to have mastered their profession as she has done.

We have already had occasion, in reviewing M. Fajole's work on migraine,[1] to express our own opinion as to the pathology, and the main features of the appropriate treatment, of this very troublesome malady. Between the two views, which respectively represent migraine as essentially an affection of the stomach and of the brain, we declared unhesitatingly in favour of the latter; regarding the disease as (primarily) a trigeminal neuralgia, and the stomach affection as a mere secondary complication due to reflex nervous irritation. We are glad to find that Miss Garrett, who has evidently made a very careful clinical study of the disease, so far shares our opinions that she rejects unhesitatingly the view of Tissot and his school, which regards the stomach as the original source of the disease. She came to the following conclusions: "(1) Migraine is essentially a neurosis, having its origin in the abnormal condition of a portion of the brain. (2) In all probability migraine, in a natural classification

[1] *Vide Practitioner*, vol. ii 1869.

of diseases, should be placed between asthma and epilepsy. (3) The central nervous debility is almost invariably accompanied by an analogous depression of some portion of the visceral nervous system, most frequently of the gastric or the duodenal nerves. (4) There is reason to suppose that in migraine, as happens in other cases of severe and recurrent pain, the central lesion consists in imperfect nutrition of the nervous tissues. The immediate result of this is a too rapid discharge of the inherent electricity of the nervous molecules. (5) The cerebral lesion, though usually congenital or inherent, may be induced by certain poisons, as those of gout and malaria, or by some external interference with nervous nutrition."

With these general propositions we quite agree, and we have further been much interested in Miss Garrett's detailed clinical and pathological description of migraine. She draws a broad—possibly rather too broad—line of distinction between this malady and the ordinary neuralgias of the fifth; showing that though the origin of migraine is undoubtedly in the nervous centres, the stomach is involved from an early period in many cases. We don't know whether Miss Garrett would accept the following pathological theory, but it seems to us the only logical result of the facts observed both in her experience and in our own. Migraine is a neuralgia dependent on some affection of the central nucleus of the trigeminus which has an unusually strong tendency to communicate itself to the neighbouring and closely connected nucleus of the vagus. Any trigeminal neuralgia, especially any supra-orbital neuralgia, may provoke reflex stomach symptoms if it last long enough: the clinical and pathological distinctive note of migraine seems to be, that the reflex irritation of the stomach is set up earlier, and far more frequently, than in other nervous headaches. And conversely, the influence of any indigestible matters in the stomach may be much more provocative of migraine than of other forms of neuralgia, because in the predisposed condition, when the patient is already in danger of migraine, the condition of functional debility is likely already to have spread from the trigeminal to the vagus centre, and rendered the latter morbidly sensitive and irritable.

The treatment of migraine which our authoress recommends is grounded thoroughly on the idea that migraine is essentially a neuralgia: thus the prime remedies which she recommends are the bracing influences of fresh air and vigorous exercise, and next to these the purely nervine tonics, especially nux vomica. But she makes a special feature of the subsidiary diet and medication by which the stomach and intestines are guarded from becoming the source of irritation (*e.g.* from alcoholic stimulants), which might act as an *exciting* cause of the access of

migraine, Miss Garrett's theory being that the predisposition to the latter is usually inherent and congenital. We are glad to see that she adds her testimony to one most important, but as yet little employed remedy, the constant electric current. Not only is she perfectly justified in asserting that a few very short *séances*, during which the current from no more than ten cells is applied, will act as a more powerful tonic and prophylactic against the attacks than any drugs, but she might have spoken far more strongly than she has done of the power of this remedy to arrest the actual paroxysm. Our own experience is simply this, that it is possible nearly always to alleviate, and often completely to stop, a paroxysm, especially if taken in time. The current need only be applied for about two minutes in the case of the actual attack, and for about half this time when used as a prophylactic.

In finishing our brief notice of this very interesting and practical treatise, we cannot omit a word of praise for the clear and fluent style in which it is written, and the excellence of its French diction; these are remarkable, and add much to the pleasure of the reader.

Aneurisma dell' Aorta Ascendente (porzione extra-pericardica) trattato coll' Elettro-puntura. Caso clinico del Cav. Dottore Malachia Decristoforis, Med. prim. dell' Ospitale Maggiore di Milano. (Reprinted from the *Gazetta Medica Ital.-Lomb.*)

The subject dealt with in this pamphlet, and in some additional notes which we have received from Dr. Decristoforis through the kindness of a mutual friend, is one of the highest interest, and we cannot forbear to express our surprise that in England, as yet, only two or three physicians have taken any notice of it. The prospect of being able, by so simple and harmless a method as electro-puncture can now be made, to save a considerable proportion of cases of an otherwise so fatal disease as aortic aneurism, or, at least, to greatly prolong the life and mitigate the sufferings of a considerable number of these patients, is a deeply fascinating one; and the evidence adduced by Dr. Decristoforis assists materially to make this prospect more assured. He relates three cases in which the treatment was applied (only one has been published), in all of which an encouraging degree of success was obtained, and in one of them results which are truly remarkable. The latter patient is still alive; the two others, who were in a very advanced stage of the disease, merely had the electro-puncture applied to a "secondary" aneurism, or offshoot of the main tumour, and died from subsequent hæmorrhage. But in all three

cases the same substantial facts were observed with regard to the action of the remedy—viz. that the pulsation at once ceased or greatly diminished, and the sac (or portion of sac) contracted in volume and acquired a firm consistence. The current employed was derived from a battery of twenty-one modified Daniel's cells. In the successful case three needles were inserted into the tumour, at about two-fifths of an inch from each other. Each of these, in succession, was first made the positive pole for eight or ten minutes, and then the negative pole for a similar period; the circuit was closed by a rheophore of moist sponge applied to the skin of the chest. A graphic description is given of the way in which the needles, which at first moved rhythmically with the pulsation, came to a standstill during the passage of the current, showing that consolidation was then and there going on. In this case, as the tumour was reached within the chest (it was situated in the ascending part of the aorta, and the needles were inserted to the right of the sternum), it seems likely that the greatest part of the whole aneurism was consolidated at once: at any rate there was a very remarkable and immediate cessation of the symptoms and physical signs of pressure on surrounding parts. The man (aged forty-five) made a perfect recovery at the time. But the most interesting fact of all is communicated in the MS. communication which we have received from Dr. Decristoforis. Quite lately, many months after the operation, he had again seen this patient on account of a return of the symptoms of compression, and a faintly visible pulsation in the second right intercostal space. The renewed application of electro-puncture caused the immediate disappearance of pulsation and also of the sensations of discomfort, and at the date of his letter, three weeks after the second operation, Dr. Decristoforis writes that "oggi il malato sta benissimo."

Dr. Decristoforis writes moderately and sensibly. He does not venture to speak of electro-puncture positively as a radical cure for aortic aneurism, but neither does he consider this impossible, of course supposing that the case be not too far advanced, the tumour accessible, &c. But he insists strongly on the perfectly innocuous character of the operation, provided that a not too large *quantity* of electricity be employed, and that the *constancy* of the current be carefully secured. It seems to us there can no longer be any doubt that it is the duty of all hospital physicians at once to give this promising procedure a fair trial in aortic aneurism, both in the direction of radical cure when the conditions seem to afford a chance of this, and in that of mere mitigation when this alone can be hoped for.

Nota bene, that there seems nothing to stand in the way of even frequent repetitions of the operation, which might greatly prolong life in some cases when cure could not be hoped for.

Experiments on the Effects of Alcohol (Ethyl-Alcohol) on the Human Body. By E. A. Parkes, M.D., F.R.S., Professor of Hygiene in the Army Medical School, and Count Cyprian Wollowicz, M.D., Assistant Surgeon, Army Medical Staff. (Proceedings of Royal Society, vol. xviii. No. 120.)

This very valuable series of experiments affords one of the best illustrations possible of the great difficulties that surround the question of the functions of alcohol within the organism. It is quite unnecessary for us to say anything of the high qualifications which Professor Parkes possesses for the investigation of such a subject, both from his intimate familiarity with clinical observation and practical physiological chemistry, and from his candid and judicial temper of mind. And yet it will be seen, from our remarks, that this highly condensed report, extending to thirty-two closely printed pages, and representing nearly a month's continuous experimental work, really covers only a small area of the field.

The researches now put forward by Dr. Parkes and Count Wollowicz were made on the person of a soldier of temperate habits, in remarkably good physical condition, and of superior intelligence. As he was an habitual smoker, it was judged better to let him continue to smoke his regular allowance of half an ounce of tobacco per diem. He was prepared for the experiments by a preliminary total abstinence from alcohol during ten days. The actual time covered by the observations was divided into five periods: during the first eight days he took only water tea, or coffee, with his meals; for the next six days he added to this diet rectified spirit, taking, in divided quantities, on the first day one fluid ounce of absolute alcohol, on the second two fluid ounces, on the third four fluid ounces, on the fifth and sixth eight fluid ounces on each day; he then returned to water for six days; and then for three days took each day half a bottle (twelve ounces) of fine brandy, at 48 per cent. alcohol; then for three days he returned to water. During the whole twenty-six days he took exactly the same daily kind and quantity of solid food, and almost exactly the same quantity of water. The alcohol was always taken only with meals.

Broadly stated, the results of these experiments may be described as singularly negative. First as regards bodily *weight* (other conditions remaining constant), the effect of alcohol appeared to be quite unimportant. Secondly, as regards *temperature*, so far from any depression of temperature being noted, in both the alcohol periods the *rectal* heat was elevated to nearly half a degree above that of the water periods, while the axillary temperature was not seriously affected at all. Thirdly, the effects on the *circulation*, as measured by the

frequency of the pulse, and its sphygmographic form, are considered by our observers to indicate a stimulant influence on the ventricles of the heart, increasing with the dose, and produced, probably, through the agency of the nervous system; but (by their own account) singularly small so long as anything like a moderate quantity of alcohol was taken. Fourthly, it appeared that the *urinary water* was somewhat increased by alcohol; but the exact physiological cause of this effect could not be ascertained. Fifthly, as regards *nitrogen of the urine,* alcohol appears to exert no influence of importance upon the healthy body, if the influx of nitrogen be constant. The conclusion of the authors on this subject is quite contrary to that of previous observers, who had found that nitrogen is largely retained in the body when alcohol is used, and that thus alcohol both increases assimilation, and, when food is deficient, saves waste of tissues. Sixthly, a similar absence of any important influence on the *phosphoric acid, chloride, and free acidity of the urine.* Seventhly, the discharge of nitrogen by the *fæces* did not appear lessened by alcohol. Eighthly, as regards elimination of unchanged alcohol, the observers have no positive new facts. They admit that the researches of Schulinus and of Anstie and Dupré are strong evidence that only a very small part of the ingested alcohol can be recovered from the excreta. They do not attempt any quantitative valuation of the amount eliminated; but they express the opinion that elimination possibly goes on for a considerably longer time than the latter observers supposed.

Proceeding now to notice these observations more in detail, we may say of the conclusions on weight, on temperature, and on excretion of nitrogen, &c., that the results arrived at are of a nature decidedly to stagger implicit believers in "laboratory physiology," and to cause every worker on the subject of alcohol who has been cautious enough to avoid giving definite opinions as to the details of its physiological action to congratulate himself on his prudence. It is impossible to believe that Drs. Böcker and Hammond were altogether wrong in their researches as to the influence of alcohol on weight and nitrogen; and the results that Dr. Parkes has arrived at will merely convince impartial persons that experiments of this sort need to be repeated on a variety of subjects before a reliable conclusion can be arrived at. Similarly, it seems out of the question that Drs. Ringer and Rickards in this country, Lichtenfels, Möller, Binz, and Bouvier in Germany, and Tscheschechin in Russia, could be wholly wrong in their unanimous though independent assertions that alcohol diminishes bodily temperature. Where, however, there is such a direct conflict of testimony between first-rate authorities, armed with all the apparatus of elaborate physiological experiment, it would be an impertinence for the

mere critic, sitting comfortably in his chair, to attempt to pronounce any decision. It will be more to the purpose if we accept this part of the observations of Parkes and Wollowicz as correct, and on that hypothesis seek to estimate the consequences to the physiological doctrine.

Let it be granted, then, that, as regards the healthy body, alcohol has no influence one way or another on temperature, and that it fails to influence the excretion of nitrogen, or of phosphoric acid or chlorine, or the free acidity of the urine. If this be the case, the reader will perceive that the main indictment of the teetotal party in recent times against alcohol—that it checks those processes of oxidation without which true vital activity cannot be maintained—falls to the ground. But if this be the case, we have further to inquire, what becomes of the very considerable quantities of alcohol daily taken into the system even by temperate drinkers? Does it simply enter the body, and passing through it as an inert substance quit it unchanged by the channels of the various emunctories?

Upon this latter topic Messrs. Parkes and Wollowicz give a very uncertain opinion; and we feel bound to say that their mode of dealing with the question does not satisfy us. In face of the powerful influence which alcohol seems, to the eye and all the senses, to exert upon bodily function, the inquiry whether it really passes altogether or in great part unchanged through the organism demands a very searching and exhaustive treatment. Our readers know that MM. Lallemand and Perrin, on the basis of a totally insufficient and merely *qualitative* analysis of the excreta, decided that elimination was total. Messrs. Parkes and Wollowicz decline, in face of the strongly contradictory evidence given by Schulinus, and by Anstie and Dupré, to take so strong a view as Lallemand's, but they suggest that the English observers may have underrated the period during which elimination is continued, and that, after all, a very considerable portion of the alcohol may escape unchanged, by the various channels of elimination. As to this we must remark that our observers are evidently unaware of the extent and multiplicity of Anstie's later experiments, which include many hundreds of observations upon the effect of single doses, and appear to decide unequivocally, that elimination never continues by any channel so long as twenty-four hours, and that with anything like moderate doses the whole process terminates so rapidly that in some six or eight hours, on the average, it is impossible to detect the faintest traces of alcohol, either in breath, urine, or sweat, even with the excessively delicate chromic acid test. But we are anxious not to make out too strong a case, and we might therefore concede, for argument's sake, that as much as one half of the ingested alcohol might escape from the body unchanged

(though such a supposition will, we venture to say, appear wildly improbable to any one who has made a sufficiently large and varied series of experiments on the subject). Take then the case of a sober though generous liver, such as many thousands in the well-to-do classes, who consumes a daily allowance of two ounces of absolute alcohol: what, let us ask, becomes of the ounce daily of absolute alcohol which is neither excreted unchanged, nor yet oxidized within the body? A very simple sum in arithmetic will show that as the excess of ingestion over excretion goes on regularly every day, there would be an accumulation of alcohol within the body which would amount in the course of twelve months to eighteen pounds, or *one-ninth of the total bodily weight* of an average male adult! A more complete and fatal answer to the elimination theory could hardly, it seems to us, be desired. But before leaving this part of the subject we must remark that our authors' grounds for thinking that elimination is continued over several days appear to us very weak. We venture to say that no sphygmographer of first-rate experience would confirm their opinion, on the evidence of the pulse-traces which they give, that the pulse remained affected by the influence of alcohol after several days' abstinence from the latter; and as regards the asserted "very slight" reaction of the urine to the bichromate test on this day, we must insist that it is far likelier than not to be a mistake, seeing that it is absolutely contradicted by what we have personally observed in our experience on this point, which we believe to be unique. Our readers will judge whether we speak hastily when we say, that during six consecutive months, in the year 1867, we devoted ourselves afresh to the *daily* examination of this question, never taking a new dose of alcohol till every trace of elimination of the last had disappeared from breath, urine, and sweat. In short, we can see no grounds whatever for reviewing the judgment to which recent researches had led us, that all save a mere fraction of the alcohol ingested—especially in the case of moderate doses—is destroyed within the body. We may justly be required to suggest what can be the outcome of this daily oxidation of so large a quantity of a hydrocarbon within the body. According to Dr. Parkes (and we are much inclined to think that on this point he is nearer the truth than his antagonists) alcohol does not withdraw oxygen from its customary action upon the tissues and the ingested food *during the state of health.* If this be so, we can only suggest that additional oxygen must be employed, and that the combustion of the alcohol by this must generate force; and as that force does not appear to manifest itself in the shape of generally increased bodily *heat*, it is difficult to avoid the conclusion that it must take the form of muscular motion, or possibly this in part and gland-force

in part. If it be true that for a healthy man the difference between drinking water and drinking two ounces absolute alcohol per diem means an increase in the heart's beats of something like $\frac{1}{60}$ of their total daily number, then as we know that multitudes of persons are in the constant habit of consuming this daily allowance without ever suffering the slightest cardiac mischief, it is difficult to avoid the conclusion that this extra amount of heart-work has been gained entirely at the expense of the alcohol, and not of any waste of tissue or of vital power.

One final criticism must conclude this brief notice. It is with diffidence that we question the logic of so clear-headed a thinker as Dr. Parkes; but the importance of the subject is so great that we must be allowed to protest, with all our force, against the inferences which he draws from the facts observed during a slight catarrhal attack of his patient, which came and went, during the course of one of the alcoholic periods. He assumes, because the temperature (which was never higher than 100·7) was not affected by the considerable doses of brandy which the man was taking, that the power of alcohol to diminish temperature in pyrexia is conclusively disproved. We must deny the *sequitur;* the more so as some published experience of pyrexial affections shows that large doses of alcohol, when the temperature is only *slightly* elevated, only aggravate the condition of things in every way, producing narcotism and aggravating the dicrotic change in the pulse-form, while the very reverse is the case when these same doses are given in conditions of very high pyrexia. But upon these points we hope soon, either in this journal or elsewhere, to lay a large and decisive mass of evidence before the profession.

Notes on the Treatment of Skin Diseases. By Robert Liveing, M.A., M.D. Cantab., Assistant Physician and Demonstrator of Skin Diseases at the Middlesex Hospital. London: Longmans, 1870.

We regret that our space will only allow us to say a very few words in commendation of this very excellent little book. It is the model of what a practical class-book should be, for enabling students to follow up intelligently the treatment of skin-diseases in hospitals; and for the busy practitioner, who has no time to study long treatises on a subject which is usually treated with the most wearisome and unpractical prolixity, it will be a very welcome and useful book. It is very condensed and compendious; and yet it is quite free from the vices of *scamping*, and routine statements, which are the curse of most of these pocket manuals.

Clinic of the Month.

Treatment of Uterine Catarrh by the application of Carbolic Acid.—Dr. W. Playfair observes that in a large proportion of old-standing cases of uterine catarrh it is hopeless to expect a permanent cure by any means which do not act directly on the seat of the disease, which is the lining membrane of the cavity of the uterus and cervical canal beyond the external os, accompanied, of course, with secondary morbid states of the body of the uterus and cervix, such as hypertrophy, congestion, &c. Rest, applications to the exterior of the cervix, and general treatment, will unquestionably cause a temporary improvement; but on a recurrence to the old habits of life all the original symptoms return. There are serious objections to intrauterine injections, unless the os is first dilated with laminaria tents, as they are apt to bring on severe uterine colic. By means of fine probes of whalebone or flexible metal, round which a thin film of fine cotton-wool is wrapped, alterative applications can readily be made to the interior of the uterus without pain or danger. Dr. Playfair states that in the very numerous cases in which this plan of treatment has been carried out, in no single instance has anything but the greatest benefit accrued. It is no doubt advisable to select the cases judiciously, and where there is much uterine tenderness, intrauterine treatment should be postponed until this has been diminished by rest, leeching, &c.; but with proper precautions the treatment is perfectly safe. A concentrated solution of carbolic acid, eighty parts to twenty of water, is used; and it acts so well that for a long time nothing else has been employed. After the first application the discharge is sometimes increased, but after the second or third it is generally greatly diminished, and a single application is often sufficient to cure superficial erosions of the cervix. As a rule there is no difficulty in passing the probes, as in true uterine catarrh the os is invariably patulous. As the case improves the patulous state of the os diminishes, and this is found to be one of the most certain signs of improvement. Dr. Playfair appends the history of several successful cases. (See *Lancet*, July 2, 1870.)

Treatment of Scarlet Fever.—A correspondent of the *Lancet*, as a septuagenarian and a practitioner of fifty years'

standing, who during twenty years of that time has filled a public appointment in a densely populated district of London, in which this disease was often epidemic, desires to add his testimony to that of Dr. Fergus in favour of the application of cold water to the skin during the hot stage of the disease. "More than fifty years ago, when Dr. Currie was in his glory, and deservedly so, from the simplicity, common sense, and success which followed his treatment of fever generally, and of scarlet fever particularly, by cold water effusion and cold water sponging, I well considered the plan of treatment adopted by him; and as soon as I was called upon extensively to treat disease, which was soon after that time, and in its most formidable inroads upon an impoverished and extensively suffering class, I adopted Dr. Currie's plan in principle but not in the letter. Instead of using exclusive affusion or sponging, my plan was to wrap the denuded body in a small sheet or table-cloth, wrung dry out of a pail of cold water, during the hot stage of fever in general, and especially of scarlet fever, and to repeat this application every two, three, or four hours, as long as the state of increased heat continued; which treatment, instead of being objected to, or being very obnoxious to the patient, was almost universally considered an agreeable application, and instead of being feared, most frequently was asked to be repeated. This plan requires to be adopted during from two to four days, until the hot stage has subsided. My next remedy was to immerse the body in a hot bath of from 96° to 97°, repeated generally twice at an interval of two days. With this treatment I seldom gave ammonia. The stimulant given was aromatic tincture, in one fluid drachm doses, at intervals as required, with beef-tea and milk; and from the beginning to the end of the treatment the patient took from 10 to 15 minims of the diluted nitro-hydrochloric acid, with one fluid drachm of the syrup of orange-peel in a wine-glassful of water frequently, which had the double effect of being antiseptic to the zymotic process existing, and of gratifying the palate and relieving thirst." The writer states he had scarcely ever to lament subsequent dropsy. He carefully avoided purging the patient during the progress of the disease, though great attention was paid to the bowels. (See *Lancet*, July 16, 1870.)

Blood-letting in Scarlet Fever.—Dr. Bramwell, of Perth, states that many years ago he had formed a high opinion of the value of blood-letting in acute scarlatina dropsy, and more ample experience has only served to confirm him in his former views. During a late severe and protracted epidemic in Perth dropsy as a sequela has been unusually common and very deadly, nine cases dying from this cause alone out of forty-four fatal cases. It was observed that three-fourths of the dropsical cases were

preceded by a mild attack of scarlatina. Cold was certainly not the exciting cause, as the majority were carefully watched and never exposed at all. It seems more probable that, when the scarlatina rash is copious, the skin does the bulk of the poison elimination work; when the contrary, it is the kidneys which suffer from the poison, become congested, and hence the anasarca. The anasarca was usually ushered in by febrile symptoms. The quantity of urine excreted varied, but the amount of urea was always low, and albumen was always present. In regard to treatment Dr. Bramwell observes that nothing is to be compared to blood-letting in the dropsy which follows scarlet fever; it is incomparably the best diuretic, and often turns the tide when all other means have failed. Some of the milder cases will indeed do well if sharply purged and freely sweated; but there are many cases that altogether refuse to respond to such treatment, and diuretics even of a mild, unirritating character, such as digitalis, with bitartrate or acetate of potash, do not better the patient's condition in the slightest degree. As a general rule, local depletion, from two to six leeches over the loins, according to age, will answer every purpose; but should uræmic convulsions ensue, general bleeding will be found invaluable, both in arresting the fits, and in restoring the secretion of urine. When the patient is over eight years of age, eight or ten ounces should be drawn, *or a decided effect will not be produced.* Chloroform may here also be used with much benefit after depletion. Dr. Bramwell adds the details of several successful cases. (See *British Medical Journal*, July 9, 1870.)

Tic Douloureux cured by Galvanism.—An interesting case is reported from the practice of Dr. Wilks, of a patient who first began to suffer from neuralgic pains in the left side of the head. At first the pains were slight and transient, but they gradually became worse and more frequent, until they were now excruciating, and brought on by slight causes, such as blowing the nose, talking much, or eating. The nerve involved appeared to be the first division of the fifth. She had lost all her teeth on that side; she had never had rheumatic fever or ague, and was in other respects in good health. She was ordered three minims of tincture of aconite three times a day, but this produced no improvement. On February 1st she was ordered a drachm of chloride of ammonium every six hours. On February 7th, being no better, she was ordered half a drachm of the hydrated peroxide of iron and three grains of sulphate of quinine every four hours. On February 11th she was no better, and was ordered fifteen grains of bromide of potassium every four hours. On February 17th she was no better; all medicine was ordered to be omitted, and a continuous current of

galvanism from twenty-five cells to be applied: after this she gradually improved. On February 28th she was much better. On March 18th she went out, saying she was quite well. (See *British Medical Journal*, July 9.)

Effectual Plugging in Epistaxis.—It is generally expected, when the anterior and posterior nares are plugged, that a clot forms on the floor of the nose, which compresses the oozing vessels. M. Fano, of Paris, endeavours to compress with more certainty in the following manner:—Instead of tying a pledget of cotton or lint to the free end of the thread, which has been made to enter at the nose and emerge from the mouth, M. Fano ties a series of little pledgets along that string, in the same fashion as papers are tied to the tail of a kite. The string being now pulled from the nasal end, is made, by a little management on the velum, to pass behind the latter with its four or five pledgets, until the latter are fairly lodged in the nose, the last pledget of course occluding the aperture of the posterior nares. The front must be plugged in the usual way. The whole is left four days, and the success in the cases cited by M. Fano has been remarkable. (See *Lancet*, July 2, 1870.)

Diphtheria treated by Sulphuric Acid.—Dr. Balbirnie states that having read Mr. Pollock's paper on the removal of carious bone by the application of sulphuric acid, he thought it might be equally efficacious in its action on dead adventitious tissue or false membrane as in that of diphtheria; and he had speedily an opportunity of putting it to the test, for he was sent for to a steady, well-to-do tradesman, aged 60, who had been a fortnight under the treatment of a herbalist. There was acute bronchitis complicating diphtheria; pulse 120, weak and intermitting; respirations 30; temperature of the mouth 101°. The tongue, tonsils, and pharynx were thickly coated with the characteristic membrane. The isthmus faucium was nearly blocked up. Dr. Balbirnie got two small sponge mops firmly secured to sticks, and after a few vigorous applications of the sulphuric acid, with half water, succeeded in clearing off the whole obstruction. The dissolved membrane came away bodily by gargling and rinsing the mouth. The pain did not last long, and the mucous membrane was not excoriated, only heightened in colour. The relief to the breathing, to the fetor, and to all the symptoms was speedy. Next day there was a slight fresh exudation, which on application of the acid was at once removed. Convalescence was prompt, and the man was up in a few days and down stairs in his parlour. The plan of treatment suggested by Dr. Balbirnie seems to be deserving of further trial. (Ibid. July 9, 1870.)

Treatment of Typhoid Fever with New Milk.—Dr. Yule furnishes corroborative testimony of the value of this method of treatment, having had twenty-six successful cases on this form of disease. The indications he considers should be followed are, to check diarrhœa and to nourish and cool the body. With these objects in view, astringents were used in all the cases (with occasional doses of ipecacuanha), diluted sulphuric acid being found most serviceable. The acid was used from the beginning to the end of the fever. When the diarrhœa was violent, the most powerful astringents were used; and when the bowels were once locked up, they were so maintained for from ten to fourteen days, with not only no inconvenience, but with decided advantage. The milk supplied was cold and new, and taken *ad libitum*. No wine was given during the active continuance of fever, as it increased the diarrhœa when tried, and promoted delirium. When the fever had left, and the patient became exhausted and sleepless, then a few ounces of wine in these cases did well. In two cases, where there was great pain in the ilium, blisters there applied did good. He believes that milk nourishes in fever, promotes sleep, wards off delirium, soothes the intestines, and in fine is the *sine quâ non* in the typhoid form. (See *Med. Times and Gazette*, July 9.)

Prevention of Pitting in Smallpox.—Mr. Higginbottom refers to his formerly expressed opinion, that the application of nitrate of silver is safe, simple, and efficacious in preventing the pitting of smallpox. The concentrated solution should be applied on the whole surface of the face and ears, in the same manner as is recommended in erysipelas—the solution to be applied on the second or third day of the eruption. The progress of the vesicles is immediately arrested, and in four days they present small hardened eschars free from inflammation. In a few days the eschars come away from the face without leaving pits. The nitrate of silver not only prevents the pits, but the inflammation, irritation, and offensive suppuration which are so distressing to the patient. The nitrate of silver might be applied all over the scalp (if the head were previously shaved), as in erysipelas, to prevent cerebral inflammation. (See *British Medical Journal*, July 16.)

Treatment of Mesenteric Neuralgia.—Dr. Eulenburg, in the course of his lectures on mesenteric neuralgia, remarks, in regard to the most important form of it, that, namely, produced by saturnine poisoning—*i.e.* lead colic—that the treatment must be directed towards the elimination of the lead salts from the body and the prevention of the recurrence of poisoning. For the purpose of elimination those drugs come into play which increase

the secretions, as laxatives, diuretics, and diaphoretics. Charcoal baths are renowned for their power of eliminating lead through the skin; and it cannot be disputed that the thermal waters of Aix-la-Chapelle have produced good results in many cases. Elimination through the kidneys is aided by iodide of potassium, which forms a soluble double salt with the lead compounds present in the blood and tissues. As a prophylactic measure and a *conditio sine quâ non* of complete recovery, change of occupation is necessary, but that can rarely be adopted. Workers in lead must avoid dust as much as they can, must not eat in the workroom, must take frequent walks, and be particularly scrupulous in matters of cleanliness. He agrees with Œsterlen in thinking the administration of chemical prophylactics, especially of preparations of sulphur, which are to form insoluble sulphates with the lead deposited, to be useless, as is also the advice to avoid common salt, so as to prevent solution of the inhaled particles of lead. The employment of narcotics, and especially of opium, is, on the other hand, of great value; and he has seen the most striking effects produced by the hypodermic injection both of opium and of morphia. Belladonna, hyoscyamus, nux vomica, and nicotine are more uncertain in their action than opium. Chloroform may be recommended internally. The peculiar mode of action of the narcotics is partly explained by the experiments of Nasse. He finds that opium and strychnine increase by reflection the irritability of the excito-motor ganglia of the intestines. These latter may thus counteract the effect of the inhibitory fibres of the splanchnic nerves, the irritability of which is increased during the paroxysm. Warm baths and the local application of heat by means of embrocation with warm oil or large poultices to the abdomen may be resorted to as slight palliatives in lead and other forms of colic. On the contrary, Monneret has recently recommended cold as a palliative, but he has found no followers. (See *Med. Times and Gazette*, July 9.)

Treatment of Complications of Scarlet Fever. — Dr. Spender, of Bath, discusses the treatment: (1) of pyæmic inflammation of the joints; (2) of delirium; and (3) of cervical abscess. In regard to the former, he considers the two most trustworthy means are, (*a*) the local application of heat and moisture, and (*b*) the administration of quinine. Foment, he says, the joint or joints with some hot medicated fluid, surround each with a layer of cotton-wool, and place over this again a piece of oil-silk, which should be tied down securely above and below the joint, so as to protect it from draughts. In one case he began the use of quinine without delay. One grain was given in an ounce of acidulated water every three hours, night and

day, and, the bowels having been opened with castor-oil, no other medicine was prescribed. The fall of temperature was the first notable effect, and this was distinct and abrupt on the day after the treatment was begun; and again, in twenty-four hours after this, the heat of the body did not exceed the normal standard. Simultaneously the development of local symptoms was arrested and convalescence was rapid and complete. Quinine thus appears, as Dr. Binz has shown, to be an antiseptic and antiphlogistic. Delirium, as Dr. Gairdner has shown, is frequent and not very dangerous in scarlet fever; but there are two forms—one occurring in adults, which is usually an index of high fever, and requiring but little treatment; the other in children, occurring later in the disease, of much more serious import, and arising from some sudden impairment or stoppage of the renal function. Here shaving the head, blisters behind the ears, with compound scammony powder, warm baths, and milk food, may be employed with advantage. Cervical abscesses he opens early and by a valvular incision. (See *British Medical Journal*, July 16.)

Treatment of Urethritis.—Dr. Stein, of New York, after commenting on the general inefficacy of copaiba and cubebs, the oil of *Erigeron Canadense*—which, it appears, has some celebrity in America—and some other drugs in the treatment of gonorrhœa, remarks that the remedy which has given him more satisfaction than anything he has hitherto employed is the oil of yellow sandal-wood, which has often been found successful in cases which had proved rebellious to other means. It has the advantage that it can be taken in the majority of cases without inconvenience or without disordering the system. It has to many a very pleasant odour, not at all an objectionable taste, and a very soothing effect upon the inflamed urethra. For this reason it can be administered with benefit even while there is considerable scalding and pain. The oil is obtained by distillation from the wood of the East Indian tree *Sirium myrtifolium*. The dose is from fifteen to sixty drops three times a day, taken with liq. potassæ, or in peppermint water, or perhaps preferably in capsules. Forty-eight hours is often sufficient to suppress a very abundant flow. (See *New York Medical Journal*, June 1870.)

Extracts from British and Foreign Journals.

Eucalyptus Globulus as a Remedy for Intermittent Fever.—Dr. Lorinser gives the details of a series of observations he has made upon the therapeutical value of this plant, which is one of the myrtle tribe, in ague, in continuation of his experiments begun in 1869. The leaves of the plant were macerated in spirit, and when a sufficiently strong tincture had been obtained, he distributed it amongst various physicians practising in the aguish regions of the rivers Theiss and Danube in Hungary. The fevers treated appear to have been of all kinds of the intermittent form, quotidians, tertians, quartans, and irregular types. The number of cases was fifty-three. Of these forty-three were completely cured; five others were improved, but in consequence of a deficient supply of the tincture, quinine was resorted to; and the remainder were exceptional. The dose of the tincture administered varied from two drachms to half an ounce. Amongst the fifty-three cases there were eleven in which quinine had been tried without benefit, and of these eleven cases nine were quite cured by the tincture. In ten cases only did a relapse occur, and then it was traceable to errors in diet, exposure, &c. There seems, then, to be no question that the leaves of this plant possess powerful febrifuge qualities, and those who are desirous of trying it can obtain the tincture from Dr. Lamatsch, Wieden-Haupt-strasse, No. 16. (*Wiener Medizin. Wochens.*, No. 27.)

Extraction of a Pin from the Urethra.—M. Ticier reports a case in which a boy, aged 7, introduced, at the instance of a school-fellow, a pin into his urethra. It slipped from his hand, and as usual retreated along the passage. On examination on the following day, the mucous membrane of the meatus was red and swollen; the penis and perinæum were slightly enlarged. No pain was experienced whilst the child was lying on his back. If, however, he moved about, or endeavoured to micturate, he felt an acute pain in the perinæum. The bladder was consequently filled, and was beginning to be troublesome. M. Ticier states that he at first felt some embarrassment as to the mode of procedure to be adopted, but having read some time previously of a similar case recorded by Dr. Boinet, he put the same manœuvres in form. The fore-finger of the right hand was introduced into the rectum, to constitute a *point d'appui*,

and to enable him to discover the situation of the pin, which could not be felt through the perinæum. He was only able to feel the point in front of the scrotum. Pressing strongly with his fore-finger against the anterior wall of the rectum, and with his thumb on the perinæum, he made the point press against the inferior wall of the urethra. On raising the penis briskly with the finger and thumb of the left hand, the point perforated the walls of the canal. It was seized with forceps and drawn out for three-fourths of its length. The point was then directed towards the anus, and by pressing back the glans the head presented at the meatus, and was easily removed. The child was placed in a warm bath, in which he easily passed water. Cold lotions were then applied to the scrotum, and in a day or two the child was well. (*L'Union Médicale*, No. 68, 1870.)

Galvano-caustic Mode of removing Tracheal Tumours.—Dr. Türck calls attention to the great value of this mode of treatment, remarking that the instruments required are extremely simple, that they can be bent to any form, that their application produces no pain beyond a slight sensation of heat, though perfectly efficacious in the removal of the tumours; that the time occupied in the performance of the operation is extremely brief; that the after results are *nil;* and that, in particular, bleeding does not occur. (*Klinik der Krankheiten des Kehlkopfs*, p. 579.)

Therapeutic Value of Chloride of Iron.—M. W. E. Schaller gives the following statement as the results of his experience with this drug. The fluid concentrated chloride of iron is an unfailing remedy for chilblains, its application to them for a single day effecting a cure. It may also be used with advantage in cold climates for frost-bites. It is to be preferred to every other agent in the local treatment of pseudo-membranous affections. When diluted, it purifies and aids the healing of diphtheritic ulcers. Applied internally, it destroys the pseudo-membranes of scarlet fever, and in the majority of cases cures the patient. It is preferable to every other drug in the treatment of diphtheritis not associated with scarlet fever. It is equally serviceable in croup, especially when applied with a pulverizer directly to the parts affected. It will sometimes effect a cure of aphonia and various affections of the voice and respiratory organs, for which other remedies have been employed in vain. It is often successful in relieving angina. (*Wiener Medizinischen Wochenschrift*, No. 20, 1870.)

The Food of Infants.—Dr. C. A. Coudereau expresses himself in opposition to the generally received opinion that the milk of a wet-nurse is the best substitute for that of the mother when

the latter cannot be obtained. He has found in the milk of many wet-nurses, dependent on their want of cleanliness, a peculiar fungus, which will develop under favourable circumstances in every other kind of milk, giving to such milk a peculiar odour, and discoverable in the evacuations of the child. In regard to artificial food, he rejects also beef-tea, as well as Liebig's extract of meat, but recommends a fluid into the composition of which eggs enter largely. He considers that a very nourishing and wholesome kind of drink can be obtained from eight eggs, white and yolk together, beaten up with about two ounces of sugar and enough water to make a pint and a half of fluid. To this he adds a small quantity of lime-water, sulphate of potash, and chloride of sodium. With a fluid so composed he has obtained excellent results. (*Wiener Medizinischen Wochenschrift*, No. 23, 1870.)

Cases of Nerve Irritation cured by Surgical Operation.—Dr. Packard, of Philadelphia, records some interesting cases in which nervous irritation existed, and which were completely cured by operation. In one of these the terminal filaments of the median nerve at the side of the last phalanx of the right thumb were the seat of irritation in consequence of a large splinter of wood having been driven under the nail. Three days after the accident she was etherized, and the splinter extracted. The wound healed quickly, though the swelling subsided slowly. Three months after the child, aged 11, had choreic movements of the whole body, of all the limbs, and of the jaw; the right half of her person being somewhat more affected than the left. She had lost flesh and strength, was feverish, irritable, and unable to fix her attention upon anything. Her appetite was bad. Locally there was sensitiveness of the affected thumb, which she could not use in grasping; and she could not use her right hand at the table, or in writing or sewing. She was using iron, quinine, and arsenic under other advice. Dr. Packard recommended protection of the thumb by a plaster containing the extracts of opium and belladonna, and change of air. On her return from the seaside some improvement had occurred, but the irregular movements still continued, and she soon again began to lose condition; upon examination there appeared to be one point of especial sensitiveness at the edge of the thumb-nail, and it was agreed to attempt exsection of the nerve-filament involved. Accordingly, a large semicircular flap was removed; the nerve filaments could not be distinguished, but the subcutaneous fat and areolar tissue were cut away, and the wound was closed. Healing took place very readily. The child was noticed to be much steadier in a very few days, and this improvement continued, until about two

months after the operation her choreic symptoms had entirely disappeared. At the same time she gained flesh and strength, her appetite returned, and her temper became calm and natural. The tonics were still kept up until her health was quite restored, and then gradually withdrawn. Ten months after the original injury, and four after the operation, the child was still well, and the nail had almost entirely resumed its natural appearance. (*Hay's American Journal,* April 1870.)

A New Mode of treating old-standing Luxations of the Humerus forwards.—Professor Heine, of Innsbruck, after referring to the different modes of reduction that have been adopted, recommends the following plan. The patient is to be placed on his back on a bed that is not too low, and in a nearly horizontal position, the upper border of the shoulder projecting a little beyond the edge of the mattress, and the head being supported by the hands. The operator now, with the aid of two assistants, fixes the external border of the scapula of the affected side by a long towel, placed transversely across the chest, with another running over the affected shoulder and brought obliquely over the chest and back. He then stands on the side of the dislocation, seizes the arm, which is bent at right angles, at the elbow joint, so that, if it be that of the right side, he grasps the wrist with his right hand, and the upper arm just above the elbow with the left, elevates it slowly in a forward direction until the fore-arm comes to lie obliquely over the vertex of the cranium, and the upper arm is in the longitudinal axis of the body, and parallel to the head. The elevation is still continued till the elbow of the luxated arm is brought behind the plane of the occiput, so that the dislocated upper arm and the dorsum of the patient form an angle open behind, though very obtuse. The operator now allows the head of the patient, which has up to the present time been in the same plane with the shoulders, to sink to some extent, and describes with the still firmly-held dislocated arm a wide arc in front of the face, towards the healthy side, and back again over the chest, until it is quite depressed, and with a slight rotation of the arm outwards the elbow is brought to the side of the thorax. During the performance of this last movement, another assistant must, at the bidding of the operator, introduce his two thumbs at the proper moment and press the head of the humerus outwards into the glenoid cavity. The essential feature of these movements consists in an hyper-elevation of the arm with subsequent circumduction of the rectangularly bent arm. (*Wiener Medizinischen Wochenschrift,* No. 25.)

On the Action of Bromal-hydrate on the Animal Economy.—Dr. E. Steinauer, of Berlin, contributes a paper on

this subject to the last part of Virchow's *Archiv.* Bromal-hydrate presents a precise chemical analogy to chloral-hydrate, the chlorine of the latter being replaced by bromine. It was obtained as long ago as 1832 by Löwig. Dr. Steinauer's first experiments were made on animals with a view to determine whether a separation of bromoform occurred in the organism from the action of the free alkali in the blood; and further, whether the bromoform was eliminated as such from the organism, or was oxidized to the bromides. From experiments on rabbits and dogs, in which it was subcutaneously injected, it was clearly demonstrated that bromoform was decomposed in the blood, and there was good reason to believe that this underwent oxidation during its passage through the system. The result of a series of experiments on rabbits, guinea-pigs, and dogs, in which the hydrate of bromal was subcutaneously injected in doses varying from about 2 to 15 grains, were, with slight variations in regard to time of appearance, as follows: restlessness and contraction of the pupil occurred immediately after the injection; in the course of a few minutes the oral and nasal mucous membranes became hyperæmic; the animal then twinkled the eyelids, keeping the eyelids a moment closed, and, though never falling into a sound sleep, often gave a sudden jerk as if waking out of a dream. In several cases there was a flow of the secretions from the mouth and nose. The animal then became anæstheticised; the respiration very frequent, and dyspnœa and cyanosis followed. The pupils became expanded, the movements of the animal uncertain, and the hypnotic effect more pronounced. It squatted down and rolled over, recovering its former position after a few seconds. Pinching and pricking were not felt in any part of the body, though reflex actions occurred. Dyspnœa became more violent, and the animal died in convulsions, or the respiratory movements and pulse gradually sank till death took place, usually preceded by convulsions. Anæsthesia generally supervened with medium doses a considerable period before the commencement of dyspnœa, but with large doses coetaneously, or even subsequently to the occurrence of the dyspnœa. In accordance with the dose administered, the heart after death was either relaxed with dark red coagula in the cavities, or tetanically contracted. In employing hydrate of bromal as a therapeutic agent in man, M. Steinauer considered rightly that it was requisite to take unusual precautions, as very small doses proved fatal in animals—a grain and a half, for example, killing small dogs, &c., and a still smaller quantity rabbits and guinea-pigs. He tried it first upon an epileptic, then upon an insane patient, and finally upon another epileptic, with, upon the whole, satisfactory results. The effects upon the first epileptic are very fully and carefully

detailed, the quantity given to her, in the first instance, being 0·06 of a gramme, or rather less than one grain, but gradually rising till it reached, on one occasion, 15 grains. (*Virchow's Archiv*, Band L., Heft ii., July 1870.)

Treatment of Relapsing Fever. — A very interesting article on the relapsing fever that has appeared in Edinburgh during the present year appears in the current number of the *Edinburgh Medical and Surgical Journal*, in which its origin, symptoms, treatment, and pathology are fully given by Dr. Claud Muirhead. In regard to the treatment, which is the only point we have space to notice, Dr. Muirhead states that in the cases that fell under his own care and those of his colleague, Dr. Fraser, it was chiefly expectant, except where there were plain indications demanding interference. The experience of former epidemics held out little encouragement as to the possibility of checking the fever or of preventing a relapse, yet it was resolved to make another attempt with those remedies in repute as specifics in cases of intermittent fever, and Dr. Muirhead endeavoured to follow the indications given by Nature in her apparent efforts to eliminate the poison, whatever it might be. Thus the first method seemed to be by vomiting; accordingly an emetic was administered, and this was found to give relief to the retching previously experienced, and to empty the gall bladder, but it neither cut short the fever nor rendered the paroxysm less severe. Another method of relief adopted was cold packing. In some cases this afforded relief by inducing gentle action in the dry and hot skin by lowering the temperature one degree Fahr. for an hour (though this was not invariably the case), and by diminishing the frequency of the pulse. Nevertheless the constant changing of packs, wet sheets, and cold douches, was found to greatly fatigue the patient, and to induce greater prostration and sweating than usual when the crisis came. This treatment in no way shortened the attack; it only relieved the subjective symptoms. Sleeplessness and intense neuralgia, when present, were readily overcome with chloral given in appropriate doses without bad effects in any case. To prevent relapses quinine by the mouth was tried, and subcutaneously as acetate of quinoidine, as well as in combination with iron and nux vomica. Arsenic was also given in large doses, and nux vomica combined with iron. The result was in every case the same; none of these remedies prevented a relapse. (*Edin. Med. and Surg. Journal*, July 1870.)

Treatment of Ileotyphus. — Dr. Adolf Baginsky, of Seehausen, gives an interesting account of an outbreak of this affection that occurred under his observation in Eggenstett, in the extremely hot summer of 1868. Eggenstett, it appears, is a

village with 800 inhabitants, near Seehausen, and near a large wood. The inhabitants are principally agricultural labourers. About 50 were afflicted, 16 being from one to ten years of age, 11 from ten to twenty, 14 from twenty to thirty, and the rest above thirty. The symptoms were of the ordinary kind, the eruption, however, being sparingly developed, whilst hæmorrhage from the nose or bowels occurred in several cases; only three cases died. The mortality, therefore, was six per cent. Dr. Baginsky having seen the advantage of the cold water system in Traube's clinic, endeavoured to carry it out at Eggenstett, in the absence of proper appliances for baths, &c., by the application of large compresses, which were changed every five minutes after being dipped in iced water, and wrung out as dry as possible. These were placed on the body, chest, and head, and the plan most rigorously carried out both day and night. The effects, however, were *not* satisfactory, the patients becoming much worse in the course of the second or third week, with cold extremities, pallid face, failing pulse, &c., the worst cases being the soonest affected, and the cold compresses were consequently given up.

The patients were allowed from the commencement to drink a two and half per cent. solution of hydrochloric acid, and subsequently five grains of quinine every two hours. Milk and broth were allowed, but no solid food, and he soon had to have recourse to port wine. When the symptoms were severe he found small doses of a mixture of benzoic acid and camphor exceedingly valuable, given every two hours. The only objection to benzoic acid is, that it has a tendency to augment the diarrhœa. When hæmorrhage occurred he found active treatment was required on account of the collapse induced, and nothing answered so well as the tinct. ferri sesquichloridi in five-drop doses every two hours. He states that Traube has found tinct. of strychnia very efficacious in checking diarrhœa, but it must in all instances be given in mucilaginous fluids. (*Virchow's Archiv,* Band XLIX., Heft iv.)

New Vesicant.—M. Delpech draws attention to the fact that the emplast. vesicatorium of the French, Prussian, and other Pharmacopœias, has the disadvantage that the proportion of the active material cantharidin is very variable, that the presence of any oily substance facilitates the absorption of a dangerous poison; and lastly, that the resin is an unnecessary cutaneous stimulant, whilst it renders the smell of the plaster very unpleasant. An excellent vesicant, which possesses none of these disadvantages, exists in the combination made by Dragendorff and Massing of cantharidin with alkalies. M. Delpech employs the cantharidinate of potash, which is very volatile, and possesses in a high degree the blistering power; from an

alcoholic solution of cantharidin containing 2 grammes in 150, about 1·6 grammes fall on the addition of a concentrated solution of alkali of a precipitate which is absolutely insoluble in water. The best formula for the application of the preparation is, gelatine 2·09, water 10, alcohol 10, cantharidinate of potash 0·20, and glycerine 9·5. The mass should be equably spread on a thin layer of gutta-percha, so that each square inch should contain a definite proportion of the salt; it may of course be made stronger or weaker at will. (*Centralblatt*, No. 27.)

Climate and Consumption.—A smartly written paper appears in the last number of the *Australian Medical Journal* on this subject, in which Dr. S. D. Bird advocates a voyage to and residence in Melbourne for the relief or even cure of phthisis. There are few therapeutical agents, he points out, whose operation it is more necessary to avoid looking at from the microscopic point of view, than change of climate; and the fact of the almost complete desertion of such places as Madeira, for instance, of late years, and the great influx of invalids to antipodal climates, shows how completely the views of physicians in Europe have altered and enlarged and advanced with the age in this as in all other subjects. To praise a place as a residence for invalids of any kind because it is dry, or moist, or equable, is decidedly the microscopic way of dealing with the subject. The rational physician first asks himself what is at the root of all the symptoms, and, if he can ascertain this, endeavours to find a change of climate which will act beneficially both in the general and in the particular, both in neutralizing the tuberculous cachexy, and in quieting cough and other local symptoms: climate should in fact be used as an *alterative*, and any climate is good or bad for any given case, just in proportion as it acts in opposition to the known causes of disease; or in failure of any known cause, reverses the condition under which the symptoms originated. Now, to a large section of patients suffering from tubercular disease originating in Europe, the change to an Australian climate fulfils both general and particular indications. In the first place it is a *complete* change; and if a remedy is determined to be suitable, the more thoroughly it is applied the better. A very large proportion of British phthisicals originate from particular faults in the home climate itself,—darkness, dampness, and chilliness. In Australia they obtain light, dryness, and warmth. That is to say, the change is both complete and for the better, as it is known that the former conditions favour the development of the scrofulous diathesis, and the latter hinder it. Dr. Bird alludes to some remarkable cases of recovery from tuberculous disease. (*Australian Medical Journal*, April 1870.) [We do not believe in *Melbourne* for phthisis.—Ed. Pract.]

Treatment of Ranula.—This subject was brought before the Paris Surgical Society at a late meeting, in the shape of a case of congenital ranula occurring in an infant, related by M. Blot. The tumour, which was perfectly transparent, and as large as a hazel-nut, pushed the tongue upwards and impeded its movements, especially during sucking. After hesitating as to which of the different procedures he should adopt, M. Blot traversed the tumour with a tenaculum, and drawing it out excised it, and at the end of three weeks the infant remained cured of its malady. M. Marjolin stated that at the commencement of his practice he was an advocate for excision, but he had renounced it, in consequence of the more or less serious hæmorrhage he had in several cases seen it occasion, requiring in some of these the actual cautery for its arrest. Since then he has employed a seton of one or more threads, which is allowed to remain *in situ* for a fortnight, a month, or even longer. Suppurative inflammation is set up, which leads to obliteration and a radical cure. When the children are some years old, he renders the seton more irritating by soaking the threads in tincture of iodine. M. Marjolin states that his practice is unattended with any inconvenience, impeding neither sucking nor feeding, and has never needed to be repeated. M. Chassaignac, however, does not approve of the seton, as it sometimes gives rise to extremely violent inflammation, tumefaction of the tissues, and excessive suppuration. He prefers the application of a small drainage tube, which, traversing the tumour, may be secured to it, and which gives rise to only a very moderate degree of inflammation. He also feared excision on account of the degree of hæmorrhage. M. Blot observed that bleeding was not likely to occur after the excision of *transparent* tumours, and he was supported in this statement by M. Forget and M. Giraldès. M. Guéniot had cured a ranula the size of a hazel-nut without operation by bursting the thin sac with pressure; the fluid was reproduced, but on repeating the rupture it did not again recur. (*Medical Times and Gazette*, June 4.)

Quicksilver Suppositories in Constitutional Syphilis.—The following simple mode of treatment, if supported by experience, recommended by M. Lebert, will probably be largely employed. Proceeding on the known fact that, next to subcutaneous injection, the best method of effecting absorption is by the mucous membrane of the rectum, M. Lebert has experimented largely with various medicines, and amongst others with mercury introduced in the form of a suppository. He employs cacao butter as the menstruum, or if it be desired to make the mass of firmer consistence he adds wax, and the unguentum hydrargyri is then rubbed up with it in small and

appropriate doses. If any burning pain is experienced, it may be removed by the addition of a little morphia. The suppository is usually introduced at night, and allowed to remain for some hours, or till morning. In three or four days the cure is completed, with the employment of from twenty-five to thirty suppositories. The mouth was not in any instance affected. (*Wiener Medizin. Wochens.*, No. 27, 1870.)

On the Therapeutic Value of Gastric Juice.—Signor Arturo Menzel, in an interesting paper, supports the experiments and results of older experimenters in regard to the value of gastric juice in cancerous tumours, and has collected a considerable number of cases, in which it has been employed with advantage, either in true cancer or in lymphoma. It acts superficially on malignant ulcers, and especially on the neoplastic granulations, and altogether destroys their fœtid odour. The juice of dogs was that employed. (*Gazetta Medica Italiana-Lombarda*, 11 Giugno, No. 24.)

Secale Coruntum in Paralysis of the Bladder.—Dr. Theodor Roth, of Eutin, furnishes the details of a series of cases in which ergot has proved advantageous in the treatment of this disease. The following is one of the cases he describes. A labourer, aged 49, of powerful build and otherwise in good health, experienced, for some time previously to seeing Dr. Roth, difficulty in passing water, consisting in frequent desire and pain, whilst on attempting to micturate a delay occurred, which was not overcome or shortened by forcing. When the water at length flowed it only dribbled. On one occasion he had been working for many hours with the feet in wet earth, and on making the attempt, found it impossible to pass any water. Violent efforts to micturate gradually came on, with pain in the lower part of the belly, and he then applied to Dr. Roth. On the introduction of a catheter, a large quantity of urine was evacuated, by which the pain was removed. Twelve doses of ergot were now administered, of about eight grains each, at intervals of three hours. He was told to return if any inconvenience in the passing of the urine was experienced, to keep himself at rest and warm, to take slops, and to evacuate the bladder as soon as he felt any desire. No further treatment, however, was required, and the state of the man after the lapse of six days was better than it had been for a long time previously. (*Deutsche Klinik*, 28 Mai, 1870.)

Notes and Queries.

DEPARTMENT OF NEW INVENTIONS.

CONDY'S PATENT FLUIDS.—The extremely powerful oxidizing properties possessed by the manganates and permanganates have been well known, and have frequently been made use of in the laboratory of the chemist for a considerable time past. The merit, however, of introducing these salts to the general public as most valuable deodorizers and purifiers belongs, we believe, to Mr. Condy. But though the initiative in establishing their manufacture on a large scale thus belongs to Mr. Condy, he seems to have allowed himself to be outstripped in their economical production. In the following table will be found the strength of three kinds of Condy's patent fluids as sold in London, measured by their oxidizing power in comparison to pure permanganate of potash.

To a due appreciation of the table it is necessary to bear in mind that the crystallized permanganate used for comparison is a chemically pure article, while Condy's fluids Nos. I. and II. are solutions of the impure crude article, and that even the ozonized water does not contain the absolutely pure salt. With these explanations the table will speak for itself.

1 Description of Article.	2 Price retail in London.	3 Total solid contents in 100 parts.	4 Amount of Permanganate of Potash equal in oxidizing power to 100 parts.	5 Quantity equal in oxidizing power to one ounce Permanganate.	6 Price of the quantity given in column 5 as equivalent to one ounce Permanganate of Potash.		
					£	s.	d.
No. I.—Green Fluid . .	5*d.* per $7\frac{1}{2}\frac{3}{3}$	13·76	1·781	56·14$\frac{3}{3}$	0	3	7
	5*s.* per gall.	13·76	1·781	56·14	0	1	9
No. II.—Red Fluid . .	11*d.* per $7\frac{1}{2}\frac{3}{3}$	8·40	1·786	55·99	0	6	10
	10*s.* per gall.	8·40	1·786	55·99	0	3	6
No. III.—Ozonized Water	1*s.* 8*d.* per $4\frac{3}{3}$	0·245	0·224	447·4	9	6	5
	3*s.* per $8\frac{3}{3}$	0·245	0·224	447·4	8	7	9
Pure crystallized Permanganate of Potassium .	2*s.* per $1\frac{3}{3}$	100	100	$1\frac{3}{3}$	0	2	0

Particulars of Samples analysed.

No. I. Condy's Patent Fluid (green solution).—Contained in glass bottle holding $7\frac{1}{2}\overline{3}$; sold retail at 6*d.* per bottle, or about 5*d.* per $7\frac{1}{2}\overline{3}$ contents. The bottle was wrapped in pale buff-coloured paper, nearly covered by two large labels with green print. Cork secured by a strip of label, on which was printed "Condy's Patent Fluid. For destroying all offensive odours. Will not stain when diluted."

No. II. Condy's Patent Fluid (red solution).—In glass bottle holding $7\frac{1}{2}\overline{3}$; sold retail at 1*s.* the bottle, or at about 11*d.* the contents. Buff-coloured wrapper, nearly covered by two labels with red print. Cork secured by strip of label, on which was printed the Trade Mark, a triangle enclosing a Θ surrounded by "Trade Mark—Condy;" further, the French and English prize medals; and, lastly, printed in two circular spaces on one side, "Condy's Fluid. Does not stain when diluted." On the other side, "Natural Disinfectant. N.B. The cork in each bottle of Condy's fluid is secured by a strip identical with this."

No. III. Condy's Patent Ozonized Water for Toilet purposes.—In small stoppered bottle holding $4\overline{3}$, price retail 2*s.*, leaving about 1*s.* 8*d.* as the price of the contents. The bottle is nearly half covered by a label, on which are printed directions for use, prize medals, &c. The whole label nearly being covered by trade marks arranged in a pattern as a groundwork.

The active agent in No. I. is chiefly the manganate of soda, though in the table its effect is measured against its equivalent of permanganate. In Nos. II. and III. the active agent is chiefly the permanganate of soda, though they contain also some potash. They have also been compared to permanganate of potash.

The crystallized permanganate of potash used for comparison was bought retail for 2*s.* the ounce. It was in fine crystals, contained no soda, and its oxidizing power, as measured by pure oxalic acid, was exactly equal to 100 per cent. of permanganate of potash. It was, therefore, chemically pure.

CORRESPONDENCE.

Chloral in Delirium Tremens.—Mr. W. Rigden, Physician's Assistant at University College Hospital, sends the following notes of cases under Dr. Russell Reynolds:—

Case I.—A clergyman, aged 40, has been a drunkard for years, but worse since his marriage three and a half years ago to a woman beneath him in station, and with whom he does not seem to have got on well. He has been in the habit of taking all kinds of drinks. Has had delirium tremens several times, the

last bad attack being a little more than a year ago. Sometimes he has gone for six months without taking any drink.

His father died of paralysis from disease of the brain. The history of insanity is very uncertain.

On May 3d, 1870, having been pretty steady for six months, he began to drink, brandy especially, and on May 8th he had become so violent that the doctor in attendance placed a keeper over him; he still, however, continued to take some beer and brandy.

May 11th.—When he was admitted, the keeper said he had not slept for a week till the night before, when the doctor gave him a dose of a new medicine (probably chloral), and he had seven hours' sleep. He had been very tremulous; taken very little food; very violent at times, especially on seeing his wife.

On admission his tongue was a little coated, slightly tremulous; there was slight tremor of arms; pulse was a little over 100, moderately full. He complained a great deal of his wife, whom he threatened to kill, and of his being detained at the hospital.

He was ordered good diet; 30 grains of chloral at bed-time, and ℥iss of haust. domest. the first thing in the morning. No stimulants.

May 12th.—He went to sleep immediately after the chloral, and slept for three hours, when he was awoke by a noise in the ward, and after being awake for an hour the dose was repeated, with the result of sending him to sleep immediately. The house medicine has acted freely. Patient is this morning pure and rational; complains of no headache, only a sense of faintness and weariness; pulse 88, moderately full; appetite very defective.

May 14th.—Is quite well; takes his food well; being inclined to be restless at night, he has had the chloral repeated every night. Discharged.

Case II.—An engine-driver, aged 22, has been given to drink for ten years. Had delirium tremens five months ago, since which he has been drinking as bad as ever. Father says he has not been sober for three weeks. He drinks beer especially. No family proclivity to drink.

Present attack began on May 8th, 1870, with trembling, loss of appetite, great restlessness, delusions of all sorts, occasionally with violence.

Was admitted on May 11th, not having slept since the commencement of the attack; he was very quiet and tractable, easily put to bed. Tongue thinly coated, slightly tremulous, little tremor of his body. Pulse rather weak; ordered good diet. No stimulants.

10 P.M.—Has been very quiet, but has not slept. Temp. 99·8° F.; pulse 100.

Ordered chloral hydrate gr.xxx every hour until sleep comes on, and ℥iss of house medicine early in the morning.

May 12th.—Chloral was continued every hour till 3 A.M. this morning without producing any sleep. He got more excited, wanting to get out of bed, and slightly delirious.

Chloral was omitted, and bromide of potassium gr.xx every hour ordered. At 6 A.M., not being asleep, gr.$\frac{1}{3}$ of acetate of morphia was given hypodermically, and the bromide of potassium ordered every three hours. He went to sleep at a quarter to nine this morning, and has been sleeping off and on all the morning. His bowels have not acted. Not having passed water since admission, a catheter was passed, and 22 oz. of dark-coloured urine drawn off. Ordered gr.v of calomel.

May 13th.—Bowels opened moderately after the calomel; slept well last night, without medicine. Temperature 98·4; pulse 76, rather small and thready. Appetite bad. Ordered—

Mag. sulph. ℥j.
Tinct. zingiber. ℥xxx.
Dec. aloes co. ℥j.—Fiat haust. st. sumenda.

May 14th.—Pulse improved, appetite better; patient still in a very sullen humour. Bromide of potassium omitted, and some ammonia and bark ordered.

May 20th.—Discharged.

CASE III.—A gentleman, aged 32, engaged in literary pursuits, having been very much worried, took to drink six months ago, and, according to all accounts, has not been sober nor absolutely drunk for six months. His principal drink has been brandy and wine. His grandfather on the mother's side was a very great drinker, and his mother's brother is in a lunatic asylum through drink.

On May 13th, when admitted into the hospital, he was perfectly rational; said he thought it the best thing for him to come into a hospital; he was very unsteady in his walk, very flushed about the face. There was a good deal of tremor; tongue coated, tremulous; pulse full and strong. To have white of egg and just enough sherry to make it taste, every two hours. Pulv. opii gr.iss at bed-time, and pulv. seidlitz in the morning.

May 15th.—Not having gone asleep, and getting more excited, he was given at 1 A.M. gr.$\frac{1}{6}$ of acetate of morphia hypodermically, and at 6 o'clock, gr.$\frac{1}{3}$.

5 P.M.—Has not slept; is very excited. Bowels have not acted; has been sick after everything he has taken all day. Ordered—

Ol. terebinth. ℥ss.
Mist. acaciæ ℥j.
Dec. hordei diss.
Fiat enema statim ad min.

Et ℞ Pot. bromidi ℈j.
Sp. æth. nitrici ℥ss.
Mist. camph. ℥ij.
Fiat haust. 6tâ quaque horâ sumend.

10 P.M.—Morph. acetas gr. ½ hypodermically.

May 15*th*, 1 A.M.—Rep. morph. gr. ⅓.

Bowels freely opened after enema; vomiting not so severe. All last night was very delirious, fancying all sorts of horrible things were going to happen to him. To have beef-tea alternating with the egg; to have a little brandy instead of the sherry, but not more than ℥vj in the twenty-four hours—only for a taste.

9 P.M.—Rep. hypoderm. gr. ⅔.

May 16*th*, 4 A.M.—Rep. hypoderm. gr. ½.

9 P.M.—Has not slept at all; was more excited than ever last night. Pupils just a little smaller than natural. Sweats profusely; takes his food well. Pulse not so strong as formerly, but still very good.

5 P.M.— ℞ Chloral hydrat. gr. lx.
Tinct. aurantii ℥j.
Aq. puræ ℥j.—St.

17*th*.—Patient went into a light sleep ten minutes after taking the chloral, and continued sleeping, waking up at intervals of a few minutes for nourishment, till midday to-day, when he was very much better; not quite rational. He was then ordered—

℞ Mag. sulph. ℥ij.
Tinct. zingiberis ℥xxx.
„ card. co. ℥xx.
Dec. aloes co. ℥j.—Statim.

18*th*.—Perfectly rational; slept well last night. Bowels open freely. Feels very hungry; brandy stopped; meat ordered. Has only a little pain over brow.

21*st*.—Has slept and taken his food well; pain quite gone; has been taking the bromide of potassium, but no more chloral or morphia. Discharged.

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[1] Any of the foreign works may be procured by application to Williams & Norgate, of Henrietta Street, Covent Garden, W.C.; or Messrs. Dulau, of Soho Square, W.C.

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CONTRIBUTIONS TO OPHTHALMIC THERAPEUTICS.

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BLEPHARITIS.

Inflammation of the structures at the margins of the eyelids may appear in various degrees of severity, has been described under various names, and may entail various evil consequences; but, even in its mildest forms, it is always a source of much annoyance to the patient, and sometimes of much embarrassment to the practitioner. It often commences as a sort of pityriasis, a mere branny desquamation of the epidermis; and the little scales, irritating the delicate surface on which they rest, and inducing the patient to resort to frequent friction, lead to the formation of small pustules, which leave open ulcers. These maintain and intensify the irritation in which they had their origin, and gradually pass into the ordinary form of the disease. In many cases, however, blepharitis is primarily, as it always is eventually, an affection of the excretory ducts of the sebaceous glands, which open into the channels of emergence of the cilia. The patient may present himself with a group of three or four cilia agglutinated at their bases by a crust, and

behind this crust there will be a slight degree of redness and tumefaction of the skin of the eyelid. If the crust be removed at all roughly, the surface from which it falls will bleed, and the conditions beneath will be concealed. But if the crust be very carefully softened by warm water, and then gently removed, it will be seen that some of the cilia, instead of being closely surrounded by epidermis at their emergence, issue from the centres of little gaping ulcers or sinuses. Such cilia may often be removed by a very light touch, and always more easily than those from healthy follicles, and it will often be found that their bulbs are black instead of having preserved their natural whitish colour. The ulceration within the hair-follicle often extends also to the skin between adjacent follicles, and the whole of the surface that was covered by the crust is sore. These changes are on too small a scale, and affect parts that are themselves too minute, to be discoverable by the naked eye; but they may be very readily made out with a lens of moderate power. If the disease be neglected, it tends to spread by contiguity, by the inoculation of other follicles, by the irritating discharges, and by reason of the rubbing practised by the patient. As more and more of the margin of the eyelid is involved, the whole of the tissues between the skin and the tarsal cartilage become inflamed, swollen, and infiltrated with lymph. When the lower lid is implicated, the swelling soon removes the lachrymal punctum from contact with the globe, and the tears no longer find their normal outlet. They collect within the sac of the conjunctiva, obscure vision, and irritate and inflame the conjunctival membrane. The discharges from the ulcerated follicles mix with the retained tears and add to their acridity, and particles of atmospheric dust are also caught by the mingled fluids, and are carried to and fro over the surface of the eyeball. The inflammation excited by these causes soon becomes chronic, and affects both the palpebral and the ocular conjunctiva, producing in these divisions of the membrane pathological changes which differ with the differences in their anatomical structure. At the superior conjunctival reflection the surface is often roughened by the development of the bodies known as granulations; and the friction of these produces vascularization and inflammation of the surface of the cornea.

In the meanwhile, the lymph effused external to the tarsal cartilages tends to contract, and to cause by its contraction a permanent eversion of the lids. The follicles, injured or destroyed by long-continued ulceration, produce only feeble and distorted cilia, or cease to produce them altogether. The lachrymal sac and passages participate in the disease, and the ultimate result is an inflamed conjunctiva, a turbid and vascular cornea, and lids barren of eyelashes, and with their edges everted and inflamed. The disease is essentially a very chronic one and produces its mischief slowly, but at a rate which is essentially dependent upon the extent to which its early stages expose the eye to irritation. Thus the inhabitant of a smoky Irish cabin, or of an atmosphere filled with noxious particles of any kind, will suffer more quickly and more severely than a person in more favourable external conditions. Neglect of cleanliness, moreover, is very influential in increasing the mischief. Practically, among the better classes of this country, we seldom see the more advanced stages and more grave effects that have been described, and the worst common form of the malady is one in which the cilia are weak and irregular, the tarsal margins somewhat tumid and exuding a sticky discharge, the puncta lachrymalia removed from contact with the globe, and the conjunctiva unnaturally vascular. Sight will be somewhat impaired by the film of tears; and employment of the eyes, especially by candlelight, soon increases the irritation. The disease generally commences in childhood, often in early childhood; and it has little or no tendency to spontaneous recovery.

At the very commencement of the disorder it is not uncommon to see a crust of dried discharge covering from one-fourth to one-half of the length of the cilia that spring from the affected follicles; but at a later stage, the notion of the desirableness of cleanliness having usually been impressed on the patient or the parents, it is more common to find only a thin, hard, semitransparent layer, as if the tarsal margin had been painted with a line of collodion. Through this layer the cilia project; and its irregular margins, which have contracted in drying, seem to fasten themselves, as if by little claws, to the tumid skin below.

The treatment of blepharitis must be addressed first to the

cure of the follicular inflammation, and then to the removal of its effects. In the early stages of the malady a perfect result may almost invariably be attained; but even then its attainment will depend upon the careful observance of several minute precautions. For this purpose no trouble should be spared; because the imperfect arrest or protracted continuance of the morbid action will inevitably damage the cilia, even if it should fail to produce further and more serious changes.

The follicular ulceration is readily amenable to the influence of well-selected local applications; but from these the ulcerated surface shields itself with great rapidity by the crust formed by its dried discharges. A manifest scab that covers a considerable portion of the length of the cilia is not more effectual in this respect than the thin semitransparent film that has been described; and the first points requiring attention are that all exudation from the inflamed surface must be removed immediately before any local application is made, and that the removal must be effected with such gentleness that no injury can be inflicted upon the parts below. The obvious means of fulfilling these indications would seem to be the employment of warm water with sufficient gentleness and perseverance; but it is found that the greasy element introduced into the discharge by the admixture with it of the secretion of the Meibomian follicles enables it to resist pure water to an extent that would hardly be anticipated, and that the employment of a weak alkaline lotion is almost necessary. For this purpose Galezowski (who has studied and elaborated with great care and success the various details that promote the cure of conjunctival affections) recommends a solution of bicarbonate of soda, containing five grains of the salt to an ounce of distilled water. If a lotion of double this strength be prescribed, the quantity required for each application may be poured out, and warmed for use by dilution with an equal bulk of hot water. A small, very fine, and soft piece of sponge, which may be conveniently tied to a handle, forms the best means of applying the lotion, and the crusts, when sufficiently softened and detached, may be removed by the finger-nail. When the surface is perfectly clean, and all residual viscidity has been removed from the tarsal margin and the cilia, com-

plete drying should be effected by gentle pressure with a bit of clean, soft, absorbent rag; and what is properly the treatment of the disorder may then be said to commence.

In the first place, all loose cilia should be removed, because, while lying in the ulcerated follicles, they act as foreign bodies and keep up irritation. Some writers have advised complete depilation; but this is seldom, if ever, necessary. It is generally sufficient to take the cilia of the implicated region between the finger and thumb, and to apply to them such gentle traction as will pull out those that are diseased, and leave the rest unaffected.

The next thing is the application of an astringent to the seat of the disease. For use by the friends of the patient, ointments are to be preferred. The best are the ointment of red oxide of mercury of the British Pharmacopœia, an ointment of the same strength containing yellow oxide of mercury prepared by precipitation from the perchloride by potash (Pagenstecher's ointment),[1] and the ointment of the subchloride of mercury. Of these the first named is the most energetic, and the last the mildest; and the selection of one or the other should be governed by the amount of irritation that may exist. If this should be considerable, or if the patient be very sensitive, it will be best to modify the morbid condition by using the ointment of the subchloride at first, and by proceeding to the employment of the others when some improvement has been obtained. In most cases, however, the red oxide ointment may be used from the commencement and will suffice for the cure.

The application of the ointment must be carefully made, and is a matter on which patients will always require instruction. The object is to make it enter the ulcerated follicles; but it should not be suffered to go into the eye, and it might as well be applied to the legs as to the skin of the eyelids. It should be of sufficiently soft consistence, and if too hard, or in cold weather, should usually be warmed. For this purpose a slip of glass should be dipped into hot water, wiped, and instantly used as a spatula on which a small portion of ointment may be taken up. In this, as it softens, the point of a small camel's-hair

[1] See Pagenstecher's original paper, *Ophthalmic Review*, vol. ii. p. 115.

pencil may be rolled; and then the ointment, while yet soft, should be worked into the tarsal margin at the affected part. This little manipulation will be rendered much more easy, when the upper lid is affected, by making light pressure with a disengaged finger upon the upper margin of the tarsal cartilage, so as to tilt the lower margin forwards. If nicely managed, the preliminary washing will be very soothing and grateful, and the depilation and the application of the ointment will be painless; but if the manipulation be rough and awkward, and especially if the ointment be suffered to enter the conjunctival sac, there will certainly be lachrymation and smarting, and, in the case of children, usually unsteadiness or absolute resistance, by which the difficulties of the treatment will be greatly enhanced.

The thorough cleansing described, and the application of the mercurial ointment, should at first be repeated daily; and at night the tarsal margins should be rather freely greased with spermaceti ointment, or with almond oil, along their whole length, so as to diminish the drying quality of the exudation, and to prevent adhesion during sleep. By this means, in nearly every case, a speedy improvement will be attained.

If, however, a week or a fortnight should pass away, and no great change for the better be apparent, the surgeon should consider the desirableness of applying nitrate of silver. For this purpose a stick of the diluted nitrate should be procured, made in the proportion of two parts of nitrate of potash to one of nitrate of silver, or even still weaker. It should be scraped or filed down to a fine point, and should be applied to the tarsal margin with a light and careful hand. The ordinary cleansing must, of course, be first accomplished, and all superfluous fluid removed; but it is not desirable to dry the lids so carefully as to absorb the moisture remaining in the ulcerated follicles, since this would serve to convey the nitrate more completely to the deepest-affected parts. Nitrate of silver should be used only by the surgeon himself, and at intervals of from three to five days, the ordinary applications being made daily as before.

There is perhaps no valid objection to the early use of nitrate of silver for patients who are old enough to bear the smart without flinching; but for young children the application of

painful remedies to the eye should as much as possible be avoided. They produce fear, which hinders the proceedings of the surgeon, and places difficulties in the way of the regular inspection of progress. For these reasons they should never be employed unless the prescriber is quite sure that milder means have been used carefully and effectually, and with perseverance for a sufficient length of time. It will sometimes happen that a blepharitis reputed to be obstinate will begin to mend as soon as ever the surgeon takes the daily cleansing and depilation and the application of the ointment into his own hands, and secures the thorough accomplishment of what is desired.

When swelling of the margin of the lower lid has displaced the lachrymal punctum, so that the eye is always covered by a film of tears, the irritation thus produced and maintained is very prejudicial to recovery. It can be readily obviated by slitting up the canaliculus; and the little operation should be performed with Weber's knife. This consists of a very narrow blade, terminating in a fine short head or director, which passes readily through the punctum, and guides the cutting edge along the canaliculus. It spares all the pain and complication incidental to the use of a grooved director. The wound must then be daily opened with a probe for two or three days, to overcome the tendency of its edges to reunite. It must be remembered that such an incision is the establishment of a defect; and it should not be made merely for the purpose of saving time in treatment. Notwithstanding the lodgment of tears, the swelling will often subside, and the eyelid return to its normal contour, when the follicular inflammation is cured; and such a result should always be aimed at before the knife is taken in hand. When, however, the lower lid is not merely swollen but actually everted, and the punctum removed to a considerable distance from the globe, then incision will certainly be required, and should be performed without delay. In either case great benefit will be obtained, when the patient is sufficiently steady, by injecting the lachrymal canals with a mild astringent lotion, by means of an Anel's syringe. Many of the instruments sold under this name in England are imperfectly finished, and have nozzles that are cut off abruptly, and would be liable to lacerate the delicate lining of the

canaliculi. The nozzles should be carefully rounded and smoothed at the extremity, so that even in unpractised hands they may do no injury. A solution of sulphate of zinc is the lotion most generally applicable.

Even in recent cases, it will sometimes be a useful adjunct to treatment to paint the outer surfaces of the eyelids with tincture of iodine; and to do so will always promote the absorption of the swelling and induration that is often seen when the complaint is of old standing. If this induration should still prove obstinate, and particularly when it is limited to the margin of the lids, its removal may be promoted by occasional punctures with the point of a lancet, carried to a sufficient depth fairly to penetrate the thickened tissue. The lancet blade should be kept outside of the tarsal cartilages.

When long-continued neglect, or injudicious treatment, or other adverse influences, have caused the development of the more serious consequences of blepharitis, the patience and perseverance of both patient and doctor will often be severely taxed. The presence of ulceration or vascularization of the cornea may almost always be taken as an index of the presence of granulations on the palpebral conjunctiva, and the upper lid should be everted to look for them. Until they are cured, treatment of the cornea itself will be little better than useless; and when they are cured the corneal mischief will subside, although often leaving some permanent opacity behind. Granulations require the long continued application of some active stimulant which stops short of being a caustic; and the best is in most cases a stick of diluted sulphate of copper. This, the *lapis divinus* of German writers, should contain equal parts of sulphate of copper, nitrate of potash, and alum, fused together, and run into a mould. It should be applied daily, or on alternate days. Mr. Lawson Tait has recently much commended the employment of simple syrup; and I have found it useful to touch the granulations with *lapis divinus,* to wipe off superfluous moisture, and then to apply a coating of syrup before the lid was allowed to return to its place. Under this plan the granulations will in time dwindle, and the state of the cornea improve; but it will be many weeks or even months before the limit of improvement is reached, and any premature abandonment of treatment is

almost certain to be followed by relapse. It usually happens that the conjunctiva of the lower lid will also be covered with granulations, although they will be much smaller and less distinct than those of the upper lid, and will only give a generally villous aspect to the surface. To this condition the *lapis divinus* is equally applicable.

The instances of eversion of the tarsal margins, due to contraction external to the cartilages, are very rarely met with except in persons who cannot spare time for treatment, and who are comparatively indifferent to personal appearance. Very little can be done for them beyond attending to the state of the lachrymal passages. In the normal eye the Meibomian secretion forms a barrier to the outflow of tears over the margin of the lids, and when this barrier is removed the cheeks will be constantly wetted, and often rendered sore, if there be any obstruction to the passage of tears into the nose. In such cases it is usually desirable not only to slit up the canaliculus, but to excise a slip of its superior wall with scissors, and in this way to maintain an absolutely gaping channel, which should extend back as far as to the caruncle. The unsightliness of the red and everted edges will of course remain; but the comfort of the patient will be greatly increased.

In the milder cases, and in the early stages of blepharitis, when the disorder yields very readily to treatment, it is well in the first instance to make clear the importance of obtaining a cure. If this is not done, patients are very apt to neglect a malady that seems so trivial, and to abandon treatment while the follicles are still in a condition readily to undergo relapse. If this be done, the relapses may occur again and again; and many of the evils of the chronic form of the disease will in course of time be produced.

POINTS IN THE TREATMENT OF LUPUS.

BY TILBURY FOX, M.D. LOND.

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I AM by no means sure that many cases of lupus in their earlier stage are not rather the worse than the better for the stereotyped treatment which is generally employed with a view to their cure. On the one hand, in some instances no local measures whatever calculated to check the increase of the disease are adopted, and so the lupus progresses with great rapidity, whilst the practitioner trusts to the exhibition of internal remedies that he thinks exert a specific control over the progress of the disease, but in truth only stay it in an indirect manner through the general improvement of health they induce. On the other hand, where local measures are employed, they sometimes, from the fact that they are used inopportunely, augment rather than diminish, and certainly favour the spread of the disease. It is this latter point to which I wish to direct particular attention; but before discussing it in detail, I will say a few words upon the nature of lupus, and its relation to constitutional conditions; and these are necessary in order rightly to comprehend what is the proper treatment of the disease. Under the term lupus I mean to include *erythematous* lupus, the *non-exedent* and the *exedent* form. It is a favourite assertion of some modern writers (Neumann, Hebra, &c.) that erythematous lupus originates in the sebaceous glands, that it is, *à la* Hebra, *a seborrhœa congestiva*, a form of cuticular inflammation which, in the first instance, commences in the vicinity of sebaceous glands, and thus differs from ordinary lupus. There is most probably confusion here made. We see in England plenty of cases of lupus that at first look like an erythema, that are then accompanied by new deposit (but not so much as that tubercles

are formed), which is subsequently absorbed, atrophy, and more or less cicatrization, finally resulting. The same change, only in a lesser degree, goes on in the skin as in those other varieties of lupus in which deposit is so marked as to form tubercles. In all these varieties the disease may involve, does involve, the sebaceous glands, and there may be a complicating seborrhœa, prior to the destruction of these glands, induced by the irritation set up.

Now, I start with a positive denial of the prevalent belief that lupus is a strumous disease, and in making this assertion I am at one with the best German dermatologists. No doubt lupus may occur in strumous subjects; and then we have, in the greater amount of ulceration, in the discharge, and the free crusting, &c., evidence of the modification of the lupus by the strumous tendency of the attacked: but lupus often occurs in those who are not strumous. It consists in the formation of new granulation tissue of very definite kind in the corium, which steadily increases and infiltrates, *i.e.* spreads to contiguous parts. This new growth, which is the constant and essential condition, does not appear to be connected with any peculiarly constitutional condition, except it be a phthisical tendency. There is generally a lymphatic habit of body, debility, pallor, and the like, in those affected. We know of no specific internal medicine that will directly check the growth of this tissue. This new granulation tissue may be destroyed, and its spread prevented, by the use of certain caustics. This is the most important point in the local treatment. And now as to details on these several matters touching the general and local treatment of the disease. What I am anxious to do is to indicate the reason for the adoption of this or that particular line of treatment. In lupus, as in other skin diseases, we want to draw away our attention from the mere external appearance, and concentrate it upon the nature of the actual morbid changes going on in the skin, and trace out the connection between the two, from within outwards, and not from without inwards. In lupus we have the formation of new tissue; therefore increase of size, of blood supply, &c. This new tissue possesses certain characters: it is vascular; therefore we have vascular, and therefore softish lumps, or tubercles. This deposit is destined from the first to perish;

hence we have absorption, or ulceration, and cicatrization. Starting from such a standpoint as this, we at once notice in our practice the extent and character of the deposit—any peculiarities in the disease or departures from a typical condition, such as free ulceration or pus formation, &c., which indicate complicating circumstances.

General Remedies.—The foregoing remarks will have probably suggested to the reader that there is, in regard to the exhibition of internal remedies, one all-important question, which may be asked with every advantage at the outset of the treatment of every case of lupus—viz. Is there any complicating constitutional condition; or, in other words, is the case one of uncomplicated lupus? Struma and syphilis are the two most important complicating conditions. As I have before observed, the best modern observers affirm that lupus is not *per se* a strumous disease; a proposition the enunciation of which brought down upon my devoted head a good deal of banter not many weeks since, from one who is, however, of more weight in his own opinion than that of his fellows, but a proposition not on this account the less true. My rule is this: whenever I find a lupus which exhibits a greater tendency than usual to crust—in which the tendency to ulceration is out of proportion to the degree of tissue change, and in which pus formation is more free than one would be led to expect from the degree of inflammation—I carefully examine the patient for evidences of a scrofulous taint; and if I have any doubt, I rely much upon iodine internally, with iron and cod-liver oil pushed very freely, not so much to cure the disease as to remove directly the *mal* influence of the strumous habit of body. There is one remedy I have lately used that seems to me to be very efficacious. It is ioduret of iron encapsuled in gelatine (pil. fer. tisy. ioduré), and made by a French house. These pills may be obtained from Corbyn's house. One of these may be given four or five times a day with advantage. The *pilules de Blancard* are much relied upon by others; but I must confess that I have not had much experience with them, and it is said they pass the intestinal canal without being absorbed. I do not think they act so well as those I have mentioned. If one of the pil. fer. tisy. ioduré be put into the mouth, in a minute or two the gelatine will be so far dissolved

that the contents of the capsule will be set free. My point is, however, now to point out that struma is only a complicating element in lupus, and should be met as such.

I mentioned syphilis as a complicating condition. Now and then we meet with cases of lupus in strong and healthy subjects, which do well under the influence of mercurials administered internally. This is a fact. In some cases we may be enabled to trace the coincident evidences of syphilitic infection, and the neutralization of the latter explains the cure of the lupus. It is a point to attend to. But more than this, I am inclined to think that some cases which are generally regarded as non-exedent lupus attacking the nose, and in which the deposit is pretty uniform, and the tubercles small and fewish, and less vascular than usual, are, it would seem, really cases of syphilis hereditarily transmitted, rather than instances of true lupus. A very instructive case of the kind recently came under my care at University College Hospital, and was seen by Dr. Auspitz (Vienna), Dr. Wiggleworth (Boston), and other dermatologists, and formed the subject of a good deal of discussion. A young woman, a lady's-maid, came with what appeared to be a lupus attacking the whole of the lower part of the nose. The nose was much enlarged, tender, dullish red in colour, and shiny, and towards the left right side, at the entrance of the left nostril, was a dark adherent crust, covering over some ulceration. Outside the nose, at its junction with the cheek, were some palish, fawn or flesh-coloured, hardish or firm, not very vascular tubercles, the size of millet-seeds, or somewhat larger. The upper lip was diseased also, being red, thickened, and swollen, covered by minute scales. The nostril was blocked up almost entirely, and the disease seemed clearly to have begun by ozæna. The patient was not strumous; she did not admit nor deny having had syphilis, of which there were no concomitants. I laid great stress on the commencement from ozæna, on the rather free crusting in connection with only few, and those minute, tubercles, on the hardness and unvascular character of the tubercles, and on the scattered tubercles about the cheeks beyond the actual lupus itself, and the presence of a couple of tubercles of the same kind on the lower part of the forehead between the eyebrows. I believed that the tubercles were rather those of syphilis than

lupus, and the origin from ozæna pointed in that direction, as did the early and rather free ulceration in connection with slight deposit. I thought the case syphilitic, but my view was contested; yet the patient got rapidly well under the influence of mercurials and iron and iodide of potassium, the most marked improvement first taking place in the state of the interior of the nose. This and other cases teach me this: to suspect a syphilitic disease rather than true lupus in those conditions simulating lupus in which the tubercles are firm, *not vascular*, and much scattered about, and where crusting occurs when the deposit is slight, and cannot be accounted for by the presence of a strumous taint. So much for syphilis.

In some instances I have observed that lupus subjects tuberculize rapidly; indeed I suspect that if any constitutional condition is specially linked with lupus in its milder forms, that it is the phthisical crasis rather than the strumous; and this may account in some measure for the beneficial action of cod-liver oil in these cases. In young and pallid subjects it is well to be on the look-out for phthisis, and to use cod-liver oil freely where this may be suspected. In other instances lupus subjects are said to be healthy; and it seems to me that these are cases in which we must rely upon local measures mainly. But before I pass to their consideration, let me say one or two words about arsenic. Is it a specific for lupus? I have not had sufficient experience on this point. I have been disappointed with the action of arsenic, if only that one has had to wait months, and it may be a dozen and more, until one obtained beneficial results, and I want my lupus patients to be well long before that time has elapsed. I venture to think that the attention to diet and hygiene, with change of air, and the like, which are accompaniments of the treatment by arsenic, often more truly effect the observed benefit than does the arsenic which is given. I have nothing at any rate to say in favour of arsenic, but everything laudatory of iron and cod-liver oil, and especially the ioduret of iron noticed before.

Now, I may be allowed to say a few words about the use of local remedies. I think we all need to remember that though the real radical or essential local treatment of a lupus is the proper application of caustics, that such application may be exceedingly inappropriate, and that it is only advisable to have recourse

to it at a certain stage of the disease. There are many dermatologists who treat the disease, under all conditions, by the vigorous application of nitrate of silver or other caustic; I feel sure they do mischief frequently—if nothing more, they cause unnecessary scarring. I am sure we ought to recognize, *quoad* treatment, three stages of lupus: that in which the congestion is a marked feature—this is at an early date; the fully developed stage or state; and the healing stage. I am particularly anxious to say that I believe the treatment of all cases of lupus, especially of *lupus erythematodes* in an early stage, where the congestion is marked, the patch tender and hot, should be an essentially soothing one. I have an idea that the access of air, by its oxygen it may be, tends to accelerate cell changes, and that where congestion is very active any stimulant treatment tends to increase the amount of blood in the part, and to accelerate the morbid tissue change and to spread the disease. I know that the latter is a fact; its explanation I do not much consider here. For some years past I have soothed all lupus patches, especially those about the face, when much congested, hot, and irritable; and I know nothing better than a calamine lotion, with a little prussic acid and glycerine, applied several times a day. It may be necessary to touch the edge of the patch, if it shows signs of extending, by some caustic, but this should be done cautiously. Whilst by local means one quiets the lupus patch, by general measures the health may be improved; and when the lupus patch is less irritable and inflamed, we may have recourse to caustics; but I have seen not unfrequently serious attacks of erythematous lupus get perfectly well by the combined use of internal tonics and the application externally of some mild astringent in such a way as to secure exclusion of the external air. I am sure that a similar plan is more successful than any other in the early stages of those skin affections in which congestion is a marked feature. I will mention acute general psoriasis occurring in the young and the adult as proving this same point; the disease is generally most rapidly cured by alkaline baths and mild unguents, and general tonics internally, and made much worse by stimulating applications of all kinds, and more especially tar. Having got rid of the congestive element of a lupus, when this is more than usually marked, then is the proper time for the use of caustics, of which there

are many. But I think that in some of the minor cases, where there is a disposition to improve, and the tubercles are not large, that the emplast. hydrargyri applied each night may suffice. But if there are distinct tubercles, and there is any spreading, we have no alternative but to cauterize. For severe erythematous lupus I prefer equal parts of caustic potash and water, brushed freely over the diseased part, a poultice or a neutral unguent being applied subsequently. For preventing the spread of lupus, and destroying the tubercular form, I apply the acid nitrate of mercury; for severe and long-standing cases which much deposit I certainly give the preference to nitrate of zinc paste. It is thus made :—nitrate of zinc ℥iss, distilled water ℥j, glycerine of starch ℥j, wheat-flour ℥j, to make a paste. (This is one part in three.) For bad cases we may use one part in two. The patch is covered by a layer of the paste freshly made, and if much pain ensues a poultice is applied. The raw surface that results may be dressed with zinc ointment, or a little liquor plumbi rubbed up with adeps. When the sore has dried up, or crusted over, if necessary the caustic may be reapplied. In those cases in which dark crusts form, and the lupus discharges, a very successful plan is to clear off the scabs with a poultice, and dress the surface with a weak ointment of the pyroligneous oil of juniper ℥j to ℥j of lard. If the sore spreads, or there is much thickening, the nitrate of silver stick should be freely applied *à la* Hebra. For the exedent form the arsenical and the nitrate of zinc caustics I use by preference; but I am not so much concerned with this form of disease now. Lastly, let me add, that in the stage in which healing is taking place I use two remedies with great success: the calamine lotion before referred to, to allay heat and redness; and an ointment made with pyroligneous oil of juniper, to induce, by its stimulating and antiseptic properties, a healthy state of the granulating surface, and in such a form and strength as not to irritate: and I find, by carefully adjusting the use of the soothing and stimulating remedies according to circumstances, that I get good results in my management of the cases. I have only tried in this paper to give expression to some two or three minor points in the treatment of lupus, attention to which has obtained for me unusually satisfactory results.

NOTES ON THE TREATMENT OF THE DIARRHŒA OF PHTHISIS.

BY R. DOUGLAS POWELL, M.D.

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It is now late in the day to seek for any new remedy for diarrhœa, and it is not the object of the presen paper to bring forward any, although there may be many yet to be unearthed by those sufficiently energetic to seek them out. The practical difficulties which beset us in the treatment of diarrhœa, and particularly of phthisical diarrhœa, do not arise from any dearth of drugs, but in the selection of the most appropriate remedies, and the best times for administering them.

The writings of Dr. G. Johnson have done much to popularize the rational treatment of diarrhœa, viz. that of first seeking to remove the cause before attempting to stop the flow from the intestines. And in cases of phthisis, where there is actually ulceration present in the intestines, this method of treatment is equally sound, though it must be more gently carried out. Though the object of the diarrhœa of phthisis cannot be truly regarded as one of eliminating any specific poison, yet the phenomena observed during the diarrhœa, and the baneful effects which often follow its sudden arrest, might even bear some such interpretation.

It may be frequently observed in cases of phthisis that, on the supervention of diarrhœa, the lung symptoms abate, and the physical signs become obscured in an astonishing degree by the diminution of the secretion sounds, and an increase in the loudness and dryness of the respiratory murmur. Whatever the explanation may be, and it does not seem hard to find, I am satisfied of the fact, and regard it as a most instructive one.

The constantly recurring factors of pulmonary destruction in chronic phthisis are local congestions, pneumonia, fatty degeneration, and liquefaction; and a knowledge of the existence of what may be called a sympathy between lung and intestinal secretion warns us emphatically not suddenly and obtrusively to interfere with a flux which may be only salutary, and the sudden arrest of which may lead to those local congestions we so much dread as the first links of the destructive chain, but rather to hold our remedies in reserve for a more fitting moment. It may be remarked, in passing, that the sympathy between lung and intestine above alluded to is not confined to cases of phthisis in which there is usually a similar morbid process going on in both places; it is very commonly observed in children in whom acute pulmonary catarrh, with abundant bronchial râles over the chest, and considerable dyspnœa, will subside on the occurrence of serous diarrhœa; the sudden arrest of which by injudicious treatment will almost certainly result in the return of the more grave chest symptoms. If I might dare to say that a *derivative* effect is here witnessed, I should best convey my own idea as to the explanation of these phenomena.

While, however, it is injudicious to attempt to stop abruptly the diarrhœa of phthisis, the gravity of the symptoms, the profound anæmia and exhaustion it occasions if continued, must never be lost sight of; its treatment must be carefully entered upon at once, with the endeavour, by allaying or removing the irritation or error in gland secretion which has given rise to it, to arrest it safely and effectually.

On making a selection from the post-mortem examinations which I have made at the Brompton Hospital, of eighty-four cases in which a note has been taken of the condition of the intestines, I find facts that justify the general statement, that ulceration of the intestines, more or less extensive, is present in two-thirds of all cases of phthisis at some period of their course, and that this pathological condition is about equally common in all the varieties of phthisis, whether the tubercular, the pneumonic, or the fibroid element predominates in the lung disease. Also that, as we might naturally expect, the more chronic the disease the greater the probability of ulceration being present. I have also not very infrequently found extensive ulceration of the intes-

tines in cases in which diarrhœa had either never occurred at all,[1] or had never been a prominent symptom. Constipation is perhaps as frequently associated with extensive ulceration of the intestines as diarrhœa, and in many cases of phthisis one may observe the rule of sequence to be: constipation with abdominal pains, then diarrhœa, then constipation again. The reason of this appears obvious on post-mortem inspection, the muscular coat of the intestine being found seriously damaged, and sometimes completely cut through, by the ulcerations. The peristaltic action of the intestines is thus greatly interfered with, and constipation is the first result, until the accumulation of fæces and flatus produces irritation of the mucous membrane, which (not the ulceration *per se*) gives rise to the diarrhœa. A strong purgative given to relieve the constipation in such cases may have the most disastrous results, producing obstinate diarrhœa, or even perforation and fatal peritonitis. A case of the kind came under my notice some few months ago, in which there was extensive chronic disease of the lungs, but the patient had at no period of his illness suffered from diarrhœa; on the contrary, he complained much of constipation: to relieve this some purgative pills and draught had been incautiously given him, and having no effect had been repeated; the symptoms of peritonitis came on, the patient died, and post-mortem extensive ulceration of the intestines was found, one of the ulcers situated high up in the intestines having given way.

The most uncontrollable form of diarrhœa, attended with the most distressing dysenteric symptoms, occurs in cases where the ulceration has its seat mainly in the large intestine and cæcum. In those cases also in which the liver is fattily degenerated the diarrhœa is very obstinate.

Some tolerably plain rules for treatment seem to follow from the above considerations, the broadest of which would, however, involve the entire management of the dyspepsia, which is so constantly associated with phthisis, and which so frequently culminates in an attack of diarrhœa. The intestinal ulcers may, we know, long remain dormant and inactive, and our preventive treatment is clearly to endeavour to keep them so by warding off all causes of irritation. The great importance of never giving strong

[1] For a marked instance of this, *vide* Pathol. Trans. vol. xix. pp. 79, 80.

purgatives need not therefore be again insisted upon. Constipation must be remedied in good time by attention to diet and the administration of gentle laxatives, as castor-oil (when it can be taken), or a saline or senna confection, taken early in the morning, at which time these medicines are particularly efficacious in much smaller doses than at other times; or a pill of aloes 1 to 1½ grains, ipecacuanha ¼ grain, with gentian, taken immediately before dinner, is sometimes more useful. In some cases I have found extract of belladonna, with ipecacuanha and taraxacum, taken early in the morning, very useful in regulating the bowels; in other cases of no use at all.

The condition of the tongue is a very ready and excellent guide in the treatment of diarrhœa. When coated, as it most commonly is at first, I usually begin with 5 grains of each of grey powder and Dover's powder at night, sometimes followed by a seidlitz powder next morning, and next day prescribe a mixture containing bismuth (grains x) and soda. I have tried castor-oil as a preliminary in some of these cases with a good result when the diarrhœa has been preceded by constipation, but with the gastric irritation and disordered hepatic secretions usually present it is much less efficacious than the grey powder; its nauseous taste, intolerable to most of these patients, has also hitherto prevented me from prescribing it except in special cases. The tasteless or "palatable" variety may be less objectionable. Our object in most cases is, however, not to *purge* but to modify the purgative action already going on. As the tongue cleans, an astringent mixture, as hæmatoxylum, may, if necessary, be used as a vehicle for the bismuth, but the diarrhœa frequently subsides without. It may be advisable to repeat the powder after an interval of a day.

Very commonly, after the tongue has cleaned and become almost or quite natural, relaxation of the bowels continues, with flatulence and abdominal pains. Small doses of quinine with chloric ether and opium (ℳv) are of great value in the transition stage. This failing, cinchona and sulphuric acid, with or without opium, or a mixture of hæmatoxylum and lime-water, with tincture of cinchona, I have found most useful. Some cases resist our best endeavours in the way of treatment; the tongue remains foul and the diarrhœa persists: the best plan seems to

be in such cases to persevere with the bismuth and soda, and give the compound powder at night, or the lead and opium pill night and morning.

Absolute rest and properly regulated diet are of course of the greatest importance in every form of diarrhœa. The diet must be regulated on well-known principles, which it is unnecessary to repeat here; the substitution of brandy for beer or wine, and milk-cocoa for tea or coffee, is usually attended with advantage. Iceland moss with milk or water makes an excellent beverage at night for cases of phthisical diarrhœa. In some cases of advanced phthisis it is necessary to check the diarrhœa at once if possible, and the mist. cretæ et catechu c. opio of the hospital Pharmacopœias is the most efficacious for this purpose.

In those cases in which there is a smooth glazed tongue, with a disposition to the formation of aphtha, I have found bismuth with hæmatoxylum and lime-water the best mixture, opium being added if necessary. It is a great mistake to suppose that the presence of aphtha in a case of phthisis is of fatal augury; they may disappear, and the patient survive for months; but they show a very low ebb of vitality, usually attended with much intestinal disease.

A common form of diarrhœa is for the patient to have a sudden desire to pass a loose stool immediately after each meal, or after taking any warm fluid. Bismuth is particularly useful in such cases, or a mixture of hydrochloric acid, chloric ether, tincture of opium (♏iij to v), in a bitter before meals.

In that most fatal class of cases, in which the disease principally affects the large intestine, I have observed the greatest relief from starch and opium enemata at night, with lead and opium, or bismuth and Dover's powder, during the day. I have not noticed much good to follow the employment of sulphate of copper, which is usually prescribed in such cases.

Innumerable drugs have been vaunted as the best remedies for diarrhœa, and in some cases it is necessary to ring the changes on a large number of them. In the above imperfect sketch I have, however, only referred to a few which a species of almost unconscious selection has led me to pick out from the long list. There are many others at least equally efficacious, but those above mentioned seem to me to have done their work

well in those cases in which one could hope for good results, and in other cases to have afforded the most relief and comfort.

The choice of particular remedies in the treatment of a symptom like diarrhœa, depending on such different causes, is necessarily of secondary importance to the adoption of definite principles on which to administer them. A timely suspension of tonics and cod-liver oil, with a modification of diet, will, without any other treatment, often prevent or arrest an attack of diarrhœa.

HYDRATE OF CHLORAL IN HOOPING-COUGH.

BY WALTER RIGDEN,

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[At the present time, when it is especially desirable that evidence tending to throw light on the action of chloral should be put before the profession in as accurate a form as possible, we have decided to insert the enclosed notes, without any alteration of their form, because they represent the results of an unprejudiced trial of the remedy on a pretty large scale in the out-patient department of an important London Hospital.—Ed. Pract.]

Case I.—H. P——, aged 5 years; male.

March 8th.—Paroxysmal cough for a month; every hour in the day; worse at night; vomits after cough; no hooping.

℞ Chloral. hydrat. gr. x.
Aq. puræ ℥ss. t. d. s.

March 11th.—Cough much better; did not cough at all last night; hardly coughed at all yesterday; no vomiting; not drowsy when he wakes in the morning, nor during the day; takes his food well; bowels regular.

March 18th.—Only hacking cough. Omit chloral.

March 29th.—Fits of coughing every hour in the day; worse at night, with occasional vomiting. Rep. chloral.

May 10th.—Has had no medicine since April 19th, when he was quite well, and continued so till three days ago, when he caught a fresh cold. He now has a cough coming on in paroxysms every ten minutes in the day, and oftener the first part of the night, with frequent vomiting. Rep. chloral. Patient never came again.

Case II.—G. M——, aged 2½ years; female.

Feb. 8th.—Paroxysmal cough; worse at night; every hour in the day; with wheezing and expectoration; vomiting after cough. ℞ Chloral. hydrat. gr. v.
Aq. puræ ʒj. bis die.

Feb. 15th.—Still has a bad cough; less frequent and severe at night; sleeps a great deal better; coughs three or four times in the night; every two hours in the day; no vomiting.

March 15th.—Has been in the country for the last three weeks; cough much better while taking the medicine; but has not had any for a fortnight; since that time she has caught a fresh cold. Coughs now every hour in the day; worse at night; very violent, with vomiting.

℞ Chloral. hydrat. gr. v.
Aq. puræ ʒj. t. d. s.

March 18th.—Cough as frequent and severe; vomiting much less frequent; diarrhœa for three days. Rep. Chloral. gr. x. t. d. s.; Mist. catechu ʒij. every three hours.

April 8th.—Medicine made the child so sleepy that she has only had it every night for the last fortnight; hardly coughs at all in the day; twice when she first goes to bed, and then not at all; does not vomit.

April 12th.—Quite well.

Case III.—S. P——, aged 3 years; male.

Jan. 19th, 1870.—Hooping-cough; worse at night.

℞ Chloral. hydrat. gr. x.
Aq. puræ ʒss. omni nocte.

Jan. 25th.—Much better; coughs once in the night; oftener in the day; much less severe; sleeps well.

Feb. 11th.—Better this last day or two; when the weather was colder it came on again, but nothing nearly so bad as on Jan. 19th. N.B.—Has had no medicine for a week. Rep. chloral.

March 4th.—No hoop; only slight hacking cough.

Case IV.—J. P——, aged 18 months; male.

Jan. 19th.—Hooping-cough for a week; much worse at night; almost hourly. ℞ Chloral. hydrat. gr. v.
Aq. puræ ʒj. omni nocte.

Jan. 25th.—No better; coughs as often, but hooping less; still at night hourly.

Feb. 1*st.*—Just the same.

℞ Tinct. Lobeliæ inflatæ gr. v.
Aq. ʒj. omni horâ.

Feb. 4*th.*—Better since last medicine.

Feb. 11*th.*—Cough more frequent and severe; worse again at night; hooping returned.

Feb. 15*th.*—Cough better.

March 4*th.*—Cough more frequent and severe these last two days—five or six times a day; worse at night; no vomiting as there was formerly; hoops very slightly.

March 8*th.*—Coughs three times a day; not at all in the night; no vomiting.

March 15*th.*—Cough about the same; very severe, lasting five minutes; not altered much for fourteen days.

℞ Chloral. hydrat. gr. v.
Aq. puræ ʒj. t. d. s.

March 18*th.*—Much better; only about twice a day; no hoop; sleeps well; cough less severe.

March 22*nd.*—Coughs about twice a day; not drowsy.

April 1*st.*—Coughs three or four times a day, very violent; hoops sometimes, but generally more of a hacking cough; caught a fresh cold; not drowsy. Never seen since.

Case V.—C. L——, aged 16 months; male.

Feb. 26*th,* 1870.—Hooping-cough all the winter; more frequent than every hour in the day; about the same at night, keeping him awake; vomits about once a day after cough after food. ℞ Chloral. hydrat. gr. viij.
Aq. puræ ʒij. t. d. s.

March 1*st.*—Cough better after first dose; passed a good night; cough not more than two or three times in the day, not at all at night; very drowsy. Rep. chloral once a day.

March 8*th.*—Nothing but a short hacking cough; bowels confined.

Case VI.—A. L——, aged 6 months; female.

March 8*th.*—Paroxysmal cough; three or four times daily, with vomiting and blueness of face; worse at night, stopping her sleep. ℞ Chloral. hydrat. gr. v.
Aq. puræ ʒj. t. d. s.

March 18*th.*—Cough about the same; better at night; sleeps well.

℞ Chloral. hydrat. gr. x.
Aq. puræ ℥j. t. d. s.

March 25*th.*—Coughs once a day; no vomiting; not hooping; not drowsy.

April 1*st.*—Hardly coughed at all since March 29th; very drowsy; pupils natural.

Case VII.—R. R——, aged 4 years; male.

Feb. 25*th,* 1870.—Cough for a fortnight, hooping for a week, every half-hour in the day, about the same at night, keeping him awake; rarely vomits; expectorates a good deal; bronchitic râles all over the chest; looks very ill.

℞ Chloral. hydratis gr. x.
Aq. puræ ℥j. t. d. s.

March 1*st.*—Hooping-cough three or four times a day; seems too low to cough; sleeps very heavily; drowsy all day.

℞ Chloral. hydrat. gr. v.
Aq. puræ ℥j. bis die.
℞ Am. carb. gr. iij.
Sp. chloroform. ♏x.
Aq. puræ ℥ss. t. d. s.

March 4*th.*—Cough more frequent, but not so often as when he first came; sleeps well; not drowsy.

March 11*th.*—Cough every hour; worse at night; looks very heavy; sonorous and large and small bubbling rhonchi all over the chest; no redness. Rep. chloral; Rep. Mist. 4tis horis.

March 15*th.*—Cough about the same as before; looks very heavy; does not take his food so well; cough better at night. Rep. chloral.

℞ Am. carb. gr. j.
Sp. chloroform. ♏iij.
Aq. puræ ℥j. omni horâ.

March 16*th.*—Cough decidedly better, but child very low and feverish. Diarrhœa has come on, of a very watery character motions every hour.[1] Omit former medicines.

[1] Distinct rash, like measles, over head and face and arms and legs; slight choryza.

℞ Tinct. aconitæ ♏ ½.
Tinct. belladonnæ ♏ j.
Aq. puræ ʒj. omni horâ.
℞ Mist. catechu ʒij. every three hours.

March 18*th.*—Bowels not opened at all yesterday, but last night about every hour, very watery. Rash is to-day fading from his face, but his trunk is covered with it. Since yesterday he has had an almost incessant dry hacking cough; he was delirious last night.

March 19*th.*—Diarrhœa still continued: died 2.45 A.M. this morning.

CASE VIII.—F. D——, female, aged 6 years.

Dec. 3*rd*, 1869.—Hooping-cough for five weeks; very frequent.

℞ Tinct. Lobeliæ inflatæ ♏ x.
Aq. puræ ʒj. omni horâ.

Dec. 14*th.*—No better; in fact worse.

Dec. 17*th.*—Cough no better, every hour, very violent, with vomiting; rather worse at nights; sleeps between paroxysms.

℞ Chloral. hydratis gr. v.
Aq. puræ ʒj. bis die.

Dec. 18*th.*—Cough rather less frequent and severe; slept better than usual.

Dec. 19*th.*—Coughed four times last night and only once this morning (9 A.M.), very slight; slept well; not drowsy.

Dec. 21*st.*—Coughed about twice in the night and about five times in the day, very slight; no vomiting; takes her food well; is not drowsy.

Dec. 24*th.*—Cough does not wake her; slight in the day.

Jan. 7*th*, 1870.—Cough altogether much less, but rather worse the last three days; when she has left off the medicine she has not slept so well. Rep. Mist.

Jan. 14*th.*—Nothing but a slight hacking cough occasionally.

CASE IX.—A. S——, female, aged 2 years and 2 months.

Feb. 15*th*, 1870.—Hooping-cough for a week; every hour in the day; about as frequent at night; no vomiting; sleeps fairly. ℞ Chloral. hydrat. gr. iij.
Aq. puræ ʒj. bis die.

Feb. 18*th.*—Cough about the same; less severe; sleeps better.

March 18*th.*—Cough free.

Case X.—G. S——, male, aged 9 years.

Feb. 15*th*, 1870.—Hooping-cough for a week; every hour in the day; about the same at night; no vomiting; sleeps fairly.

℞ Chloral. hydrat. gr. v.
Aq. puræ ℥j. bis die.

Feb. 18*th*.—Cough less frequent and severe. Rep. Chloral. gr. x.

March 18*th*.—Cough gone.

Case XI.—E. S——, female, aged 5 years.

Feb. 15*th*.—Hooping-cough for a week; every half-hour in the day; every quarter of an hour at night; very severe, with vomiting.

℞ Chloral. hydratis gr. v.
Aq. puræ ℥j. bis die.

Feb. 18*th*.—Cough more frequent and severe. Add Chloral. hydrat. gr. v.

Feb. 25*th*.—Cough about the same.

℞ Chloral. hydrat. gr. v.
Aq. puræ ℥j. 4tis horis.

March 18*th*.—Hooping-cough gone.

Case XII.—C. R——, male, aged 3 years.

Feb. 18*th*.—Cough, worse at night; sometimes with vomiting, and blueness of face; no hooping; sleeps well.

℞ Ol. Morrhuæ,
Vin. ferri, āā ℥ss. t. d. s.

Feb. 25*th*.—Cough worse; no vomiting, nor hooping; no dulness or râles in the chest; cough keeps him awake.

℞ Chloral. hydrat. gr. v.
Aq. puræ ℥j. 4 times a day.

March 4*th*.—Very little cough in daytime; none at night.

Case XIII.—E. R——, female, aged 8½ years.

Feb. 25*th*.—Hooping-cough every hour; worse at night; with vomiting. ℞ Chloral. hydrat. gr. iij.
Aq. puræ ℥j. 4 times a day.

March 4*th*.—Cough about the same in the day; worse at night; vomits very frequently.

℞ Chloral. hydratis gr. v,
Aq. puræ ℥j. 4 times a day.

Case XIV.—C. B——, male, aged 8 months.

March 15*th*, 1870.—Convulsions once a day for ten days; cough for a month, every half-hour in the day, not so often at night; no vomiting; no hoop; bowels confined.

℞ Chloral. hydrat. gr. iij.
Syrup. ♏v.
Aq. puræ ʒj. t. d. s.

March 18*th*.—Has had no more fits; coughs every half-hour in the day; oftener at night; no vomiting; has just had a decided hoop; bowels confined.

Adde haustu Chloral. hydrat. gr. ij.
℞ Pulv. rhei c. sodâ, gr. x. alternâ nocte.

March 25*th*.—Hoops more. Coughs every half-hour in the day; not so often at night; no vomiting; last two days has been drowsy.

March 29*th*.—Fits of coughing, once last night and four times yesterday; no vomiting; not more drowsy than before; takes food well; bowels regular.

April 5*th*.—Cough rather worse again, with hooping.

April 12*th*.—Cough about the same, four or five times a day; not quite so often at night; does not seem so drowsy.

April 26*th*.—Cough less frequent; hoops strongly.

May 3*rd*.—Coughs about three times a day, about the same at night; vomits about once a day after cough.

May 10*th*.—Cough about the same; just as severe; still hoops.

℞ Tinct. Lobeliæ inflatæ ♏v.
Aq. puræ ʒj. omni horâ.

May 13*th*.—Has been very sick after last medicine; cough about the same in frequency; not so violent as before; hoops very distinctly; scarcely any sleep.

℞ Chloral. hydrat. gr. v.
Aq. puræ ʒj. t. d. s.

May 17*th*.—Coughs three or four times a day; not so violent; less hooping; sleeps much better.

May 20*th*.—Cough almost gone.

Case XV.—G. D——, male, aged 6 months.

Dec. 17*th*, 1869.—Hooping-cough every half-hour in the night; eight times in the day.

℞ Chloral. hydrat. gr. iij.
Aq. puræ ℥j. bis die.

Dec. 18*th.*—Cough just the same.

Dec. 19*th.*—Slept much better last night; coughed only eight times; slight wheezing in the chest.

Dec. 21*st.*—Cough less frequent and less severe; sleeps well; does not vomit; is not drowsy.

Dec. 24*th.*—Cough much better; less frequent and severe.

Dec. 28*th.*—Coughed about twelve times yesterday; severer than before, with vomiting; sleeps well.

℞ Chloral. hydrat. gr. v.
Aq. puræ ℥j. t. d. s.

Dec. 31*st.*—Has been vomiting after medicine for the last three or four days.

℞ Chloral. hydrat. gr. v.
Syrup. simplicis ℥j. t. d. s.

Patient not seen since.

Before I begin to discuss the value of the hydrate of chloral in treating cases of hooping-cough, as judged of from these cases, I think it as well to mention that all these cases were taken from out-patients, the regularity of whose attendance and the accuracy of whose statements it is very difficult to ensure. I regret very much that Cases I., IV., XIII., and XV. should be incomplete, though I think one may not unfairly consider that those patients would have appeared again had they not got better, especially as three of them—namely, I., IV., and XV.—had already been once greatly benefited by treatment, but had caught a fresh cold; and Case XIII. was under treatment too short a time to be able to come to any conclusion as to the value of the remedy.

Out of the fifteen cases there was one death (Case VII.). This child, when first seen, was very low, with severe hooping cough, complicated with bronchitis, and it could not be expected but that chloral alone would do anything but harm in such a case; however, it relieved the cough considerably, and, with carbonate of ammonia and spirits of chloroform, the child might have improved, had not measles and finally diarrhœa ushered in a fatal issue.

Of the remaining fourteen, there is only one case in which

chloral does not seem to have done any good, and that is Case VIII., mentioned above. This leaves thirteen cases, which have all been more or less benefited by the treatment, many of them very rapidly; in others the relief is less marked.

I may add that I have had at least three other cases which had been getting better under chloral in about a month's treatment, and that they have not since shown themselves to me to give up their papers; and that therefore I have no notes of their cases. It is an interesting fact that Case XIV., before chloral was commenced, had been having convulsions every day for ten days, and that she never had any after the treatment had commenced. The convulsions in this case do not seem to be due to the severity of the cough, as the convulsions were stopped directly, whereas the cough was not altered at all for eleven days.

I hope that the publication of these cases may induce others to try a remedy which I am sure is as good, if not better, than any which have yet been used.

[We think it necessary to add the caution that the reporter seems hardly to give sufficient credit to the natural tendency of hooping-cough to subside after a certain duration.—Ed. Pract.]

ON THE USES OF WINES IN HEALTH AND DISEASE.

BY THE EDITOR AND STAFF.

PART II. ON WINES IN DISEASE.

Section I. Wines in Acute Diseases.

(Continued from p. 96.)

2. We come now to the subject of wine-treatment in the *non-febrile* acute affections. In this group we include (1) the occurrence, from any cause, of hæmorrhage to such an extent as to constitute of itself a rapid danger to life; (2) the acute neuroses; (3) the condition of shock-collapse, whether from extreme emotion, from violence, or from severe surgical proceedings.

(1.) Before we discuss the relations of wine to individual varieties of hæmorrhage, let us try to lay down certain broad principles as to the indications and contra-indications of alcoholic liquids generally, in cases of dangerous bleeding. Now there are two objects with which we may give alcohol in dangerous hæmorrhage—either we may desire to stimulate a heart which is in danger of stopping from syncope induced by excessive anæmiation of the nervous centres, or we may hope to produce contraction of the relaxed peripheral vessels, and thus directly assist the efforts of nature to arrest the bleeding. And there are likewise two corresponding dangers in the use of wine; for on the one hand we may over-irritate the heart and cause such an increase of the force and rapidity of the circulation as may increase or renew a bleeding which tended to spontaneous arrest, or on the other we may overshoot the intended effect upon the peripheral vessels, and induce paralytic dilatation instead of contraction of the latter. To take first the case

of threatened syncope, it may be at once admitted that a certain amount of severity of this symptom forms a positive indication for alcohol which over-rides every theoretic objection, because the danger is not merely that of suddenly fatal heart-stoppage, but also of a more gradual and more deadly arrest of the cardiac pulsations by the formation of coagula within the pulmonary artery—a peril which reaches its maximum in subjects whose blood, from any cause, is hyper-fibrinous. Putting aside the case of great syncopal tendency, however, it may be said that on the whole the balance is heavily against the use of alcoholic stimulation in acute hæmorrhages generally. And further, it may be laid down as a general principle that the danger from exciting too violent cardiac action is greatest in cases where the hæmorrhage either comes from organs—like the lungs—which are anatomically near to the pulsating centre, or from a large artery in any part of the body, especially if there be reason to think that the vessel is diseased. There remains, however, a not inconsiderable class of cases in which the tendency to hæmorrhage is mainly due to, or its dangerous continuance is mainly kept up by, a relaxed and atonic condition of the smaller arteries and the capillaries; a condition which is perhaps most frequent and most prominent in the menorrhagic discharges of women of lax fibre, and in the intestinal hæmorrhages of typhoid patients of a similar constitutional type.

In considering the special uses of wines in acute hæmorrhage, we must keep in mind the distinction between (*a*) effects intended to be produced on the heart, and (*b*) effects intended to be exerted on the peripheral vessels.

(*a*) In regard to the heart, there are two kinds of indications which may decide us in the first instance to give alcohol, and then to select certain wines as the appropriate form.

In the first kind there is so large a loss of blood, either absolutely or relatively to what the patient can afford to lose, that the nervous centres are drained of blood and force to a degree that immediately threatens life. Here, though wines may be useful, it is chiefly on account of their alcohol, and only the more potent kinds, in large dose, can avail to meet the danger. We need hardly mention the case of enormous post-

partum hæmorrhage, which is so familiar; there is scarcely a practitioner who has not once or twice in his life seen, with amazement, women of temperate habits swallow as much as half-a-pint or a pint of brandy or a whole bottle of port under such circumstances, without the least intoxication, and with the sole result of a resurrection from almost absolute death. It is difficult to explain these remarkable effects on any other theory than that of an enormously rapid oxidation of the alcohol, and consequent development of nervous and muscular force available for the desperate needs of the organism.

A second variety of quasi-syncopal cases is, we believe, essentially different in its indications, as it certainly is in many outward features. Everyone has seen and recognized the above-mentioned cases of extreme and sudden anæmiation, with dead greyness of the face, faint indigo colouration of the lips, restless jactitation of the limbs, and slow flickering pulse collapsing at the lightest finger-touch. There are fewer, perhaps, who have adequately recognized another group of hæmorrhagic cases, in which the heart is also deeply involved, but in another manner. In these patients, of whom much the greater number are women, both pulse and countenance might readily deceive a careless observer as to the source of mischief, for the complexion is not steadily pale, but changes from red to white, or even, in some cases, scarcely suggests the idea of pallor at all. The peculiarity of the case is, however, best marked by the state of the pulse, which is *very* rapid, and apparently still of considerable volume. It has occurred to ourselves to hear such a pulse described as "bounding;" but strict attention (even without the use of the sphygmograph) will detect that the beats are more or less unrhythmical, and that the artery is easily compressible. Now the tendency of these cases, we venture to believe, is very different from that of the last-mentioned kind; and the danger is not so much of positive arrest of the heart's action, as of serious occurrences on the side of the nervous system. Instead of the generally diffused exhaustion of the nervous centres which is indicated, in the more ordinary cases of acute hæmorrhage, by simultaneous disturbance of consciousness (*without* insensibility), and a tendency to *general* "jactitation" (slight clonic convulsions), there is here a tendency to convulsions of

an epileptoid character, sometimes so like true epilepsy as to be undistinguishable from it. Before we discuss the pathology of these cases, which is a doubtful matter, we will say, with more confidence, what is their appropriate treatment; for upon this point there are considerable grounds for forming a distinct opinion. We believe that any large doses of alcohol, especially in the more concentrated forms, are likely to be productive of nothing but mischief. Unlike the case of true epilepsy, where a stiff glass of spirit and water (though a most unadvisable remedy) has nevertheless indubitable power to stop or modify an impending fit, these semi-hysterical cases are seriously complicated by narcotic inebriation, and in every way made worse, by the adoption of any such treatment. It is quite otherwise, however, with the effect of such a stimulant as a glass of light champagne; the reviving effect of this upon the nervous system at once exerts a remarkable steadying influence on the circulation, calming and at the same time fortifying the heart's action. It must be understood that we do not recommend this treatment for hysterical states, with rapid and irregular pulse, which are *not* dependent on hæmorrhage; the cases are essentially different. What is the real pathological import, then, of the cases we have just been considering? We can make no more than a strong guess, and it is this: that the patients whom we have now described are for some reasons—probably of inherent constitution—more liable than others to break-down of the functions of the medulla oblongata, and that the phenomena observed are in fact the result of the influence of hæmorrhage upon the vagus and vaso-motorial centres which the medulla contains, the rest of the nervous centres remaining comparatively unaffected. It is but a speculation, certainly, but at present we can suggest no other explanation of the facts; and on the other hand, the effect of a slight but rapidly-acting stimulant like champagne upon the vagus and vaso-motor centres might well be expected to exercise the calmative and regulating influence on the circulation which it appears actually to produce; and at the same time to avert the tendency to epileptoid convulsion.

(*b*) In what regards the possibility of producing a beneficial increase of tone in the peripheral vessels, by means of the use of wine, and so helping the natural arrest of passive hæmorrhage,

we are able to say but little in the way of exact indications. It is doubtful, even, whether the peculiar ingredients of wine offer any additional advantage, in this respect, over merely alcoholic liquids. The most remarkable instances of this kind are shown in the occasional effect of stimulants in checking menorrhagia which is not dependent on positive organic disease, but rather on want of tone of the uterine vessels, and it is well to note a broad and decided distinction between the proper method of administering stimulants in these cases, and that which obtains in the case, which might at first sight seem analogous, of post-partum hæmorrhage. The principal machinery of arresting bleeding in the latter case is contraction of the uterine walls, and very large quantities of alcohol may be useful, and even absolutely necessary, for this purpose. It is otherwise with the passive hæmorrhage of the non-impregnated uterus; here we apply the stimulus rather to the vessels themselves; and it behoves us to be careful that we do not overshoot the mark, and produce narcotic dilatation, instead of tonic contraction, of the arterioles and capillaries; nor is it common to find that large doses are of any advantage—on the contrary, they usually do harm. In such cases the remedy should be used in a careful and tentative manner, and the sphygmograph might be advantageously employed to test its effects upon arterial tone. If the signs of increased tension coincide with diminution of the hæmorrhagic tendency we have the happiest evidence that the alcohol is doing good. It is advisable, in such cases, to employ the more potent wines, in small doses (half an ounce), five or six times a day.

(2.) The acute neuroses frequently call for the administration of alcohol, and in a good many cases wine is preferable to any other form. Of these the most conspicuous example is unquestionably afforded by severe infantile convulsions. It is needless to say that in the majority of such affections some source of peripheral irritation forms an important factor in the malady, and that the removal of this, when possible, above all things demands our attention. Sometimes, indeed, the mere removal of the irritation at once subdues the convulsions; this is most frequently seen where gastric or intestinal irritation is present. But we must remember two things: first, that

convulsion does not follow peripheral irritations, unless these are very severe, except in subjects whose nervous system is in a state of morbid irritable debility; and secondly, that the continuance of convulsion may produce irreparable mischief before we can thoroughly remove the peripheral irritation. In the convulsions of dental irritation, for instance, we are now aware that such local remedies as gum-lancing are seldom of any avail, the real source of mischief being the compression of the trigeminal nerve-fibres by the tight packing of the growing teeth in the jaw. Under these circumstances our true resource is in brain-stimulation; and incomparably the most effective stimulant for the purpose is a tolerably potent wine which is also rich in volatile ethers. No medicine can effect half as much good as port or sherry of good age and keeping; the latter is the more accessible, and our own experience leads us to rely upon it with implicit confidence. For infants under one year, half teaspoonful doses should be prescribed every half hour till the symptoms begin to decline; and it is seldom indeed that this result is not produced in a short time, if the treatment be steadily pushed. Still more necessary is this kind of stimulation, when from improper feeding the infant has been practically starved, and the irritability of the nervous system thereby indefinitely heightened.

Another case of acute neurosis in which the value of the potent and also highly etherised wines can hardly be over-rated, is the acute form of chorea which threatens life, and which in so many instances actually does prove fatal. Here there is very often a tolerance for large doses which is extraordinary, and so long as we keep below the line of narcotism, and administer the stimulant with regularity and watchfulness, there is no need for timidity as to quantity; the danger is pressing, and a very large total daily allowance may be absolutely necessary. Unquestionably, however, a vigilant discrimination must be made between different patients, for whereas the naturally feeble and anæmic patients, especially when the attack has been precipitated by severe emotional shock, almost universally require the free use of wine, there is a smaller group in whom constitutional and nervous debility has a much smaller, and some functional irritation a much larger share; and these are

often more amenable to the influence of bromide of potassium than to that of wine. The occasionally severe chorea of pregnancy is an example of this class, and also the acute chorea sometimes produced by excessive masturbation.

As regards tetanus, the question of alcohol treatment may be said to be in a transitional state. The free use of alcoholic stimulation might have been fairly said, ten years ago, to offer by far the best chance to the patient, and in fact many recoveries took place under this treatment. Certainly it was far better than the unlimited use of opium, or of chloroform, which were much the commonest methods. At the present moment, however, several new remedies are putting forward high claims to confidence in tetanus: of these Calabar bean, nicotine, and carara are supported by a mass of important testimony, and a certain amount of evidence exists in favour of chloral. Personally, we are inclined to believe most strongly in nicotine, and next to this in Calabar bean, and at the present moment we should certainly try one or other of these, in preference to alcoholic stimulants.

The case of delirium tremens may be mentioned here only to repeat the emphatic protest which we have always made against the employment of alcohol at all, except in rare instances of thoroughly broken-down old drinkers. We are not at all sure that even this qualification will not soon be rendered altogether unnecessary.

Very acute neuralgia may sometimes appear to demand the use of alcohol; and the power of alcoholic stimulants, especially of good sherry, to relieve such pain is an unquestionable fact. But there are the gravest moral objections to such an employment of alcohol, and in fact the only case in which we should be inclined to recommend its use is that of angina pectoris threatening life. Even here sulphuric ether or nitrite of amyl are far better remedies. If wines are used, they should be of the highly ethereal kinds.

To conclude what we had to say on the use of wines in acute neuroses, let us insist for a moment on the distinction between their case and that of the chronic neuroses. Alcohol, whether as wine or in any other form, is employed in the former case to save life, or for some other grave emergency. In chronic nervous

diseases this excuse does not exist; and on the other hand, as we formerly attempted to show,[1] the temptations to alcoholic abuse are exceptionally great.

(3.) We have next to consider the state of nervous shock-collapse in relation to the use of wine: the condition in question may be caused either by violence, by some surgical operations, or by extreme emotion; in either case its essential features are the same. The pulse is small and also soft, and is usually irregular in force or in rhythm, or both; the skin is cold, the pupils, more frequently than not, dilated, and always markedly inactive. Consciousness may be variously affected, up to entire insensibility, and down to a mere apathetic condition, with scarcely any loss of intelligence. We would draw attention to the fact that this state is decidedly different from another with which it is often confounded, and which is perhaps the most ordinary result of mental shock; in the latter there is first of all a condition of distinct *rigor*, followed by palpitation, flushing of the face, violent and irregular pulse. The two conditions are not only physiologically but therapeutically distinct; and although the depression may seem equally in the last case as in the first, we must not allow ourselves to be deceived. In the case of true shock-collapse the great object must be to *rouse the attention of the brain*, so to speak; and for this purpose the strongest stimulants, in concentrated form, are the best. Brandy diluted with only an equal quantity of water is the most suitable remedy; and if it cannot be swallowed it should be given in the shape of enema; but even here it would be a great mistake to suppose that enormous quantities of alcohol would be beneficial. On the contrary, in common with the two other great members of the anæsthetic group of narcotics—chloroform and ether—alcohol in decidedly narcotic doses is singularly depressing in shock-collapse,[2] though less so than either of the other two; and we may here remark that there then is no such insensibility to its narcotic influence as in the depression produced by hæmorrhage only. In shock-collapse

[1] Vide *Practitioner*, July 1869, "Indiscriminate Stimulation in Chronic Disease."

[2] We have elsewhere in this Journal expressed our belief that this state is the only condition which truly contra-indicates chloroform-anæsthesia in patients who are at all fit to bear an operation.

it is best to give an ounce dose of half-and-half brandy and water every fifteen minutes, and a very few doses are all that are useful; the rest of the work must be done by such stimulants as surface-heat, friction, &c., and advantage must be taken of the earliest opportunity to administer food, if the patient be in a state of fast.

It is quite otherwise with the state of shock-depression that commences with a sudden rigor, followed by quasi-hysteric reaction. However alarming the depression may seem, alcohol is *not* the best remedy. Sulphuric ether given by the stomach if it can be borne, or in extreme cases injected into the rectum, is at once more effective, and greatly less objectionable than alcohol; it is at once a stimulant and a regulator of cardiac action, and in milder degree of the whole cerebro-spinal nervous system. Forty-minim doses may be given by the mouth (in 2 oz. of acacia mixture), or 60 minims may be injected per anum, suspended in 3 ounces of mucilage. Camphor, in 5-grain doses, is the next best remedy for this state.

In our next paper we shall speak of the uses of wines in chronic diseases, and therewith conclude the series of papers on the Medicinal Uses of Wines.

Reviews.

On Diet and Regimen in Sickness and Health, and on the Interdependence and Prevention of Diseases, and the Diminution of their Fatality. By HORACE DOBELL, M.D., Senior Physician to the Royal Hospital for Diseases of the Chest, &c. &c. Fourth edition, much revised and enlarged. London: H. K. Lewis, 1870.

THIS book is a praiseworthy effort to accomplish an extremely important task, and one which it is strange enough that no English physician has of late years set himself to carry out. There can be no doubt that a really good manual of diet and hygiene is a great desideratum in this country; for such works on the subject as exist in our language are now considerably out of date, and cannot be said to represent the actual state of scientific knowledge. Under these circumstances Dr. Dobell published the first edition of his present work in 1864, and the book has now reached a fourth edition. We had not personally met with the earlier issues, and the work now comes before us for the first time.

We have said that we think the author has made a laudable effort to supply a real want, and we may add that, up to a certain point, his work may be commended, not only for its intention but for its manner of execution. Dr. Dobell has taken much pains to acquaint himself with recent researches of physiologists on questions of alimentation, and to express their results in a simple and compendious form; and he is entitled to credit for grappling with subjects which are too frequently left out in the cold, neither the professed hygienist nor the systematic writer on medicine taking the trouble to state with accuracy what is known about them; we refer chiefly to his remarks on the "interdependence of diseases," in which he endeavours to trace the way in which one kind of disease pre-existing in the body (perhaps as a mere remnant or vestige of its more severe action in the part) will modify the whole course of subsequent diseases, although the latter may seem to be far enough removed from it in the nosological catalogue.

The intention, then, of the book is good; and we may add that, as regards the subject of diet, the author has done good service by drawing out a series of diet tables, which will

materially assist the practitioner in that important task, the provision of a sufficiently varied nutrition which shall still always maintain the standard of alimentation as regards the essential physiological ingredients. He has also taken some pains to place the question of the dietetic use of alcoholic liquors on a practical footing, by supplying a table in which the alcoholic strength, and some other important particulars of the principal fermented liquors, are set down in plain figures.

For the rest, the book can hardly be said to present more than a hasty outline of the great subjects which it deals with. Its composition is somewhat fragmentary, and the reader is too frequently tantalized by the way in which an important topic is introduced to his notice, and then dismissed with a few curt remarks which leave the student unsatisfied. There is plenty of shrewdness and common sense displayed, and occasionally there are marks of real originality of ideas. But how incomplete the work is, the author himself will probably be among the first to admit, when we remind him that he has said nothing at all upon such important topics as the peculiar nutritive needs of infancy, childhood, and adolescence. In short, the book has considerable value as directing attention to points in the management of the sick, and of those who are merely prone to sickness, and in this respect it may be profitably studied by every busy medical man who wishes to increase his store of practical information; but it scarcely deserves the title of a "Manual" of its subject, and we cannot think that in its present shape much good would be done by putting it into the hands of non-professional persons for their private use, as the author proposes. The next edition should be much improved.

Electricitätslehre für Mediciner. Von Dr. I. Rosenthal, A. Ö., Professor in der Universität zu Berlin. Zweite vermehrte u. verbesserte Auflage. Berlin: Verlag von August Hirschwald, 1869. London: Williams and Norgate. Price 4*s.* 6*d.*

A Treatise on Medical Electricity. By Julius Althaus, M.D., &c. &c. Second edition, revised and partly re-written. London: Longmans, 1870.

There is nothing more striking in recent therapeutics than the change which has come over the attitude of the profession, at any rate of its leaders, in regard to the employment of electricity in medicine. Only ten years ago, to announce oneself a believer in electricity as a remedy of positive value was a hazardous thing; one was apt to be met directly with an incredulous smile and shrug of the shoulders, and indirectly with the damaging rumour that one was taking to quackery. Even now there are men, some of them even highly placed in the profession,

especially in England, who pertinaciously refuse to acknowledge any real worth in the treatment.

The especial incredulity of English medical men may be readily accounted for by two facts: in the first place, medico-electric quacks have been especially rampant and exceptionally dishonest and incapable in this country; and secondly, the ignorance of the English medical profession concerning the elements of electrical science was something profound and amazing. It is a fact that, till quite lately, not one English doctor in a thousand was acquainted with any other practical means of applying medical electricity than the common rotatory magneto-electric machine; that the latter was commonly spoken of as a "galvanic battery;" that if any one talked of continuous and interrupted currents he was regarded with a puzzled stare; but if he went so far as to speak of the difference between continuous and constant currents, he was tacitly regarded either as a lunatic or a mere mystifier. Yet all this time it was perfectly well known to the few who take the trouble to study French and German medical literature, that discoveries of profound importance had been made, and that some of the best scientific minds of the Continent had thrown themselves into the study of electrical physiology and therapeutics. Let it always be remembered to the credit of Dr. Althaus, that he was the first to raise the standard of progress in this country, and that he did so in evil times, when it required much moral courage for a man with capacities sufficient to ensure the success of his career in the routine practice of medicine, to deliberately devote his best energies to a dangerous and unpopular study. The first edition of Dr. Althaus's work was, to the few who cared to master its contents, a revelation of facts quite unknown in this country; and to its powerful though slowly-acting influence must in common fairness be ascribed nearly all the progress of enlightenment upon these topics in England. We say all this the more strongly because we cannot congratulate the author quite as unreservedly as we could wish on the character of his second edition lately issued. We wish to state quite plainly and once for all the sort of objection we make to a work which, taken as a whole, is one of very high ability. With all the copiousness, and almost universal correctness, on general principles which the book displays, it is very far from communicating such precise information as to practical details as would have been most truly serviceable to the practitioner. Dr. Althaus was perfectly right in his determination to give the principles of electro-physiology and therapeutics; but surely no one knows better than himself, that if the busy practitioner is to be put in a position to employ electricity with real knowledge, in his daily work, he requires a variety of

precise directions as to smaller matters. Indeed, it may very well be questioned whether the ordinary practitioner requires, or is benefited by, any study of the more recondite principles : but he assuredly does need all kinds of information as to the actual use of instruments. For instance, he has naturally only the vaguest idea of the relative positions in which the conductors should be placed in different kinds of cases, and it is useless to refer him in general terms to Ziemssen's great work, even if that were always strictly to be relied on. But the incompleteness of the directions reaches a more serious point in the chapters on the electric treatment of certain groups of nervous diseases ; this is especially the case in regard to the paralysis of the lower extremities. Every one who has much to do with nervous diseases knows how very numerous, and how extremely varied as to their causes and their whole clinical history, are the paraplegic affections; and we cannot but think Dr. Althaus's remarks on this head are insufficient to give the practitioner any clear idea of the differential indications for electric treatment which the author undoubtedly could explain with far greater fulness. Above all, there is no attempt to distinguish between two essentially different varieties of emotional paralysis; the true hysteric paralysis, in which there is always more or less affection of the *sensibility* of the limbs, and a kind of emotional paraplegia in which there is no such affection of sensation at all, and in fact no paralysis whatever, except of the voluntary motor impulse. Yet it would be wrong to call these last cases mere shamming : and in a secondary manner—*i.e.* by reason of the results to muscular nutrition—they also may come to require the application of electricity; but the principles of their treatment are quite different from that of the cases which are attended with characteristic hysterical lesions of sensation. (The word "hysterical" is of course very bad ; but it has too well-defined a meaning to be easily laid aside.)

So much we must say in criticism of Dr. Althaus's method in dealing with the treatment of the cases as to which it is most widely acknowledged that electricity can do real good. We must repeat these remarks in reference to that part of his book which deals with the more obscure and disputed curative agencies of electricity ; here, also, we regret extremely that he has not followed a different plan. If instead of brief and hurried remarks, largely made up of the statements of other observers, on an immense number and variety of diseases at first sight very remote from the probable field of electric influence, Dr. Althaus had directed his keen intelligence and extensive scientific knowledge to an exhaustive inquiry into some one or two of these less known subjects, and by the analysis of a sufficient number of cases had satisfactorily proved or disproved

the power of electricity to effect the benefits with which it has been credited by some, many readers who will now push aside his book with impatience, and perhaps incredulity, would have thanked him heartily. To take only one such question—the possibility of favourably influencing the nutrition of the retina by means of the constant current; of this there is enough *primâ facie* probability to call loudly for further inquiry; at the same time, as Dr. Althaus himself admits, the research ought to be made on a large scale, and with the constant control of ophthalmoscopic observation. If our author had himself carried out such a research, at the Moorfields Ophthalmic Hospital for instance, the results might have been most valuable.

After this amount of complaining, however, it would be unjust if we did not remark that Dr. Althaus's work deserves a substantial meed of praise. If the strictly therapeutic part be, as we think, less perfect, and less practically useful than he might have made it, on the other hand his description of the laws of electricity, of the various kinds of electrical apparatus, and of the principal facts of electro-physiology, are full and learned, without being obscure; and the reader, even if he previously knows little or nothing of electrical science, undoubtedly may learn all that it is necessary for him to understand respecting these matters, by a careful study of Dr. Althaus's book alone.

Dr. Rosenthal's book is very different in its character from Dr. Althaus's. It is not open to reproach for the scanty information which it gives on electro-therapeutics, for the author's object has been a different one, viz. to impart to medical men a sound knowledge of electricity in its physical aspects. Indeed, he expressly apologises for the existence of his book among such a crowd of treatises on medical electricity as have appeared within the last few years on account of its almost entire avoidance of the direct discussion either of electro-physiology or of electro-therapeutics, a feature which is even more marked in the present than it was in the first edition; and we presume that the author's unexpressed meaning is, that with all the talk that is now going on about medical electricity, there is far too little diffusion of sound knowledge with regard to the fundamental laws of electricity. In all that concerns this latter subject Dr. Rosenthal has a deservedly high reputation in Germany, and for those who may be about to take up electro-therapeutics with the serious intention of extending our knowledge of its applicability to the cure of disease, we recommend this book as a valuable part of the preliminary studies; and we should regret that the work is scarcely likely to be translated into English, were it not unadvisable to diminish the strength of the reasons which are daily rendering it more pressingly necessary that every aspirant to the higher medical knowledge should read German for himself. In a final chapter the author has given a condensed

account of the main principles which must guide the application of electricity in medicine; and in reference to this we may briefly mention two or three interesting disputed points which are glanced at both by Dr. Althaus and himself, and which are of considerable consequence.

The first of these moot-points is the question as to the real nature of the differences between the currents of the so-called primary and secondary coils of induction apparatuses. Duchenne, as is well known, maintained that these differences are very important, amounting almost to a complete dissimilarity of function of the two currents; subsequent observers, especially Becquerel, have altogether denied that the differences were essential, and have declared that they depended simply upon differences of tension, the primary wire being short and thick, the secondary being very long and thin, and therefore offering a resistance to the passage of the current, which involves a considerable elevation of tension. Dr. Althaus agrees with this view, in the main, but does not consider that it altogether explains the acknowledged differences of action between the two currents; he remarks that it should be remembered that the primary current moves always in the same direction, and has therefore feebly electrolytic effects; while the direction of the current is constantly changing, and the electrolytic effects would therefore be constantly neutralized; and he believes that this circumstance must be taken into account, as well as the differences of tension. Dr. Rosenthal is convinced that the difference between the action of the two coils depends entirely upon the accidental conditions which Duchenne introduced into his own apparatus. And he remarks that an apparatus specially constructed for the purpose by Dubois-Reymond reduces the distinction to a minimum; the secondary wire of this machine has much fewer convolutions than that of Duchenne. Rosenthal altogether opposes the practice of uniting the currents of the two coils, which he says is mere waste of force; it is better to have the secondary wire constructed according to Dubois' principle, and *use that only*. We are naturally somewhat chary of disputing with an authority like Dr. Rosenthal, yet we cannot help thinking that these dicta on the subject of the induction currents savour a little too much of the mere work of the study and the laboratory, and too little of the practical use of electricity in the treatment of disease. Doubtless the greater part of the differences observed between the primary and the secondary current are due to differences in tension, but we cannot readily believe that this is all. Quite recently our attention has been rather strongly directed to the varieties of effect which are observed respectively under the influence of the primary, the secondary, and the so-called modified primary obtained by the

junction of the coils; and some very curious facts, which it would take too long to narrate here, were observed, more especially in working with Gaiffe's small apparatus. And certainly we must altogether dispute the statement that the junction of the two coils has no special differential value over the single use of either primary or secondary.

Another important question just now in connection with practical electro-therapeutics, is the manner in which *galvano-puncture* may be best applied to the treatment of aneurism. Dr. Althaus, as our readers may probably remember, is a very warm supporter of the view that the *negative* pole, and that only, is the proper agent for producing the electrolytic changes in the blood contained in the aneurismal sac; and he is sarcastic at the expense of Frommhold, who had related a successful case of galvano-puncture with the positive pole, when in reality it appears that the negative must have been used, and Frommhold was in ignorance of the principles of electrical currents. For our own part, we must say that this question of which pole to employ seems to us to have been dealt with in too exclusive a way. On the one hand it would appear, from the researches of Duncan and Fraser, that there is good evidence in favour of the positive pole; on the other hand, the recent Italian cases seem to show that the alternative use of positive and negative yields very good results. On the whole we are inclined, if anything, to prefer the method adopted by Ciniselli and Decristoforis, of passing the currents alternately; but this and a number of other questions about galvano-puncture will probably be shortly solved by much larger practical experience than has yet been recorded. Meantime, it is interesting to note that Dr. Rosenthal recommends only the use of the positive pole.

Journal of Anthropology, No. 1, July 1870.—We have received the first number of this journal, which contains some excellent papers. We cannot but regret, however, that the society has separated from the Ethnological, since it appears to us that the objects of the two are common, and that, however good the material of the first few numbers may be, the establishment of competitive journals on such a subject will only lead, in the long-run, to the publication of numerous mediocre papers instead of a few of first-rate character. No such imputation, however, can be made to the present number; and we would call the attention of our readers to the opening address on the aim and scope of anthropology by Mr. C. Staniland Wake, one of the editors, to an essay by the same writer on the Influence of the Phallic Idea in the Religions of Antiquity, to a very interesting paper by Lieut.-Col. Ross King on the Aboriginal Tribes of the Nilgiri Hills, and to a series of short articles on recent works of interest in anthropology and allied subjects.

Clinic of the Month.

Treatment of Acute and Chronic Bright's Disease.—Dr. George Johnson, after defining this disease in the terms of the "Nomenclature of Disease," and describing the causes, observes that a leading point in the treatment consists in lessening as much as possible the excretory work of the kidney, especially in acute cases. The main points are: rest in bed, in a room of moderate and uniform temperature; a carefully regulated and somewhat scanty diet; and the adoption of means to promote a free action of the skin and bowels. In a large proportion of cases, rest with a scanty diet will suffice for the cure. The diet may consist of milk alone if it suit the patient's stomach, or milk with an egg or two in the course of the day, or with the addition of beef-tea or other animal broth. Stimulating diuretics, such as squills, or cantharides, or turpentine, are injurious, by increasing congestion of the kidney. The best diuretics in such cases are those means which tend to lessen renal congestion—dry-cupping or hot fomentations over the loins, hot air or water baths, purgatives, and a scanty diet, with a free use of diluent drinks—one of the best and pleasantest drinks being the imperial drink, made with cream of tartar and lemon. When the renal congestion is extreme, as shown by the scanty secretion of highly albuminous urine, local bleeding by leeches or cupping on the loins is often extremely useful. As a rule, it is well to give no alcoholic stimulants, the imbibition of alcohol imposing extra work upon the kidney, and so is opposed to the principle of lessening as much as possible the work of the inflamed gland. There are two preparations of iron which have been very efficacious in Dr. Johnson's hands—viz. the tincture of the perchloride, and the syrup of the phosphate. They may both best be taken with the food, and a few grains of hydrochlorate of ammonia may be added with advantage. Instead of the hot air bath, Dr. Johnson is in the habit of substituting prolonged packing in a wet sheet, surrounded by blankets. An efficient diuretic is a strong infusion of broom-tops, and the free action of a hydragogue purgative, elaterium, compound jalap powder, or compound gamboge pill, is very commonly followed by a copious flow of urine. Acupuncture is requisite, and affords great relief when

the anasarca is considerable. When paroxysmal diarrhœa is present, with rapid and feeble action of the heart, either brandy or hydrate of chloral may be prescribed. (See *Lancet*, Aug. 6.)

Treatment of Enlarged Tonsils.—A correspondent of the *British Medical Journal* states that, as a local application in chronic cases of enlarged tonsils, he knows of nothing equal to alum either as a gargle, in powder, or as a dust of equal parts of burnt alum and gum-arabic, the former applied with a damp brush, and the latter blown upon the part with an india-rubber bottle. These modes of treatment, however, in conjunction with other remedies, require steady, persevering application. He states he has never seen any permanent good from excision. (See *Brit. Med. Journ.*, Aug. 13.)

Retroversion of Uterus cured by Local Depletion.—Dr. Meadows records a case of a patient, aged 41, who had had three children and three miscarriages, and presented the usual symptoms of chronic metritis, *plus* the local phenomena due to uterine displacement; with general treatment, and the employment of a pessary for a time, recovery took place. After three years, the patient suffered from a relapse. Four leeches were ordered to be applied to the posterior part of the uterus, to be repeated three times at intervals of three days; after the second application of the leeches, not only were the tenderness and engorgement much relieved, but the uterus was in a much more normal position; after the third application menstruation appeared, and a week subsequently the uterus had resumed its normal position. Dr. Meadows considers the recovery here was entirely due to the abstraction of blood. (See *Lancet*, Aug. 6, 1870.)

Treatment of Visceral Neuralgia.—Dr. Albert Eulenburg describes various forms of this affection. Amongst others, he speaks of neuralgia of the testis, which, he remarks, is as obstinate as it is painful and tormenting. Like other changes in the genital apparatus, it sometimes produces psychical reaction altogether out of proportion to the gravity of the disease, hypochondriasis, melancholia, and so on. The affection sometimes has remissions of long duration, but never ceases entirely. The treatment is somewhat experimental, the pathology and etiology being still obscure. Support of the testicles by a suspensory band gives relief from pain. Various remedies have been tried —tonics, iron, quinine; now cold douches, hip-baths, sea-baths; and now narcotics, arsenic, turpentine, and many others. The greatest relief has unquestionably resulted from hypodermic injections of morphia, which may be most efficaciously employed

in the region of the spermatic duct. Some cases are on record in which marriage has effected a cure. With regard to operative treatment, ligature of the spermatic veins and subcutaneous incision of the tunica albuginea (Vidal), as well as ligature of the spermatic artery (Bardeleben), have in some cases acted beneficially, although no permanent effect resulted. Castration, sometimes urgently demanded by the patient, has in some cases effected a cure (Russell, Astley Cooper), in others the disease recurred in the spermatic cord, or in the testis of the opposite side. (See *Medical Times and Gazette*, July 30, 1870.)

Perforated Zinc in the Management of Amputation.—Professor Cleland remarks that for some years past he has found a roll of perforated zinc a thing extremely convenient to have beside one in surgical practice, as it may be made altogether to replace the use of pasteboard and wooden splints. It is even better than wire gauze, recommended for splints many years ago by Mr. Startin; it is certainly cleaner, and he thinks stronger and more easily managed. It is especially useful, he thinks, in the dressing of stumps; and he recommends in a case, for instance, of amputation of the thigh, that a strip of perforated zinc, about half a yard long, and about the breadth of the stump, should be taken and folded like a pair of sugar-tongs; then, having arranged the proper pads in front and behind, and leaving the lips of the wound bare, or only slightly covered, the zinc should be so slipped on as to have one end in front, and the other behind the stump, while the folded part is allowed to project some inches beyond it; finally,the whole should be secured with a bandage. This plan, he thinks, presents many advantages in military surgery; protecting the injured parts, permitting the pressure of the bandage to act in the desired direction, and enabling the surgeon to see and clean the wound without undoing the bandaging in the later stages. (Ibid.)

Croton Oil in Scarlatinal Dropsy.—Dr. Liddell states that for the last twenty years in cases of dropsy occurring as a sequela of scarlet fever, he has invariably given croton oil, in doses varying from one-eighth to a quarter of a drop, rubbed up with a little mucilage, syrup, and water. This dose is given every morning and repeated every two hours, until free purgation is produced, and with results highly satisfactory, every case so treated having terminated in rapid and lasting recovery; and in some, after other treatment had failed. In fact it is astonishing, he observes, how quickly the dropsical symptoms subside, whilst the patients are not debilitated by the purgation. (See *British Medical Journal*, August 13, 1870.)

Treatment of Chronic Hydrocephalus.—Dr. Dickinson, in the course of lectures now being published in the *Lancet*, makes the following observations on the treatment of chronic hydrocephalus. The treatment of this disease must be guided by its cause. In the rare cases in which the effusion is encysted in the arachnoid cavity, and its position recognized, we might hope to do good by puncturing the cyst, and approximating its walls by external pressure. In regard to ventricular dropsy, the treatment must vary according as we have to deal with increased cerebral pressure or diminished cranial resistance. If the disorder have commenced with active brain symptoms, antecedent to enlargement of the head, and subsequent to the general ossification of the skull, our hope of doing permanent good will be small; purgatives, diuretics, and evacuants of the mercurial class appear in such cases to offer the best chance. Experience bears strong testimony as to the use of mercury wherever there is *fluid* pressure within the head, and hence there is reason in the old rule, "when in doubt, give mercury," and the combination of blue pill, digitalis, and squills, suggested by Dr. M. Baillie, is a good mode of administering it. In the more numerous cases of chronic hydrocephalus in which there is no evidence of increased pressure within, and in which the enlargement has not been heralded by signs of cerebral disturbance, we may infer that the fault is in the cranium rather than in the brain. Here the judicious use of external pressure is of the first importance, as it seldom fails to stop further increase, and will often, in conjunction with other measures, occasion a decided diminution in the size of the head. Dr. Dickinson has found it the best way to surround the head with a fillet of elastic webbing, the size of which is adjusted to maintain a pressure upon the head just short of causing red marks or indentations. It should be from two to three inches wide, the lesser width answering best unless the enlargement is very considerable. Cod-liver oil, iron, and other remedies adapted to the rickety constitution, may promote ossification, help time to solder together the growing bones, and put an end to the progress of the disease. These remedies may be conjoined with others, chiefly of the diuretic class: digitalis, liquor hydrargyri, or acetate of potash, which may help to lessen the accumulation. In such cases, however, less importance attaches to evacuant measures than to those directed to the cure of the rickety state. (See *Lancet*, August 13, 1870.)

Snuff-taking as a preventive for Bronchitis and Consumption.—At the late meeting of the British Medical Association at Newcastle Dr. J. C. Murray read a paper on this subject, in which he maintained that those who habitually took snuff

rarely or never died from consumption. He also stated that several cases had come under his own immediate notice in which phthisical symptoms had been removed after free snuff-taking had been resorted to. He was of opinion that snuff-taking is in some degree preventive of consumption, and its frequent concomitant bronchitis, in virtue, perhaps, of its derivative and quasi counter-irritant action. The way to cure a cold, according to Dr. Murray, is to have recourse to snuff-taking at once.

Syphilitic Affections of the Eye treated by the Hypodermic Injection of Calomel.—Prof. Quaglino and Dr. Soresina give the details of a considerable number of cases of various ophthalmic diseases of syphilitic origin in which this plan of treatment proved successful. Amongst others are a case of complete paralysis of the third nerve of the right side; a case of punctated keratitis, with syphilitic iritis; a case of retino-hyaloitis, with syphilitic complication, &c. The calomel was sometimes injected hypodermically into the temples, sometimes into the arm, and great benefit was in all instances obtained. The advantage of this mode of treatment was particularly well shown in cases of serous iritis; and of the plastic form with posterior synechia and tendency to occlusion of the pupil, the dilatation of the pupil and the breaking down of the adhesions being effected with comparative facility. (See *Giornale Italiano delle Malattie Veneree.* Fas. v. 1870.)

Indian Hemp in Menorrhagia and Dysmenorrhœa.—Dr. Silver publishes several cases of these affections, in which Indian hemp proved of service, because he thinks its value in them is not sufficiently known. In one of these a woman came to Charing Cross Hospital, complaining of violent pain in the loins, and of a persistent bloody discharge, the blood being sometimes clotted, and then giving rise to severe bearing-down pains during expulsion. This had lasted, without intermission, for upwards of six months, and various remedies had been tried, and amongst others the hypodermic injection of morphia. At length Dr. Silver prescribed twenty-five minim doses of the tincture of Indian hemp, which, to his surprise, acted like magic, both pain and discharge having totally ceased after a few doses. Some iron was ordered, on account of the anæmic state of the woman, and she continued under observation for a considerable time, during which she remained well. Dr. Silver records several other cases of functional menorrhagia, in which equal benefit was obtained. He believes that when it is given repeatedly, each time arresting the discharge and relieving pain, but when omitted these again recur, there is just cause to suspect the existence of uterine mischief other than merely

functional disturbance. (See *Medical Times and Gazette*, July 16, 1870.)

Treatment of Bleeding Cancer by Chloride of Zinc Paste.—Mr. Maunder considers removal by the knife to be the most humane method of treating cancerous tumours, as it is rapid and entails less subsequent suffering. But cases are often met with which, for many reasons, are unsuited to a cutting operation, whilst it occasionally occurs that though it cannot be taken clean away by the knife, the tumour may be removed by other means, and life prolonged for some time. Mr. Maunder gives the case of a woman æt. forty, very stout, who, being in good general health, noticed a lump under the left breast about two years previously. At Christmas 1868 it had enlarged and become deeply adherent. In February it had ulcerated, and bleeding had set in. The sore was three inches in diameter, with thickened everted edges, and a firm, solid base an inch thick. On removing the dressing, blood flowed freely, and the odour was very offensive. The treatment adopted consisted in the application of a piece of zinc paste to the surface of the sore below the breast, and on the forcible introduction of one or two points of the same material, hardened into the indurated portion of the adjacent mammary gland. Then came cotton-wool to absorb any possible discharge; a piece of antiseptic carbolic plaster, a compress of lint, and a bandage to retain these in position. Four applications were made altogether, two days having been allowed to intervene between each. Rapid improvement followed, and the sore is now granulating healthily, with every prospect of ultimate and speedy closure of the wound. (Ibid.)

Extracts from British and Foreign Journals.

Communication of Syphilis by Vaccination.—At a recent meeting of physicians in Germany, this subject was discussed by Dr. Auspitz, jun. There can be no doubt of the importance of accurate information upon it in a practical point of view, as there have been several outbreaks of supposed vaccine-syphilis in different countries during the last few years, as at Morbihan in France, and in Berlin. The advantages of vaccination, Dr. Auspitz remarked, are too well known from the inquiries of the London Commission to need repetition. The disadvantages that have been urged against it are, that vaccination with humanized lymph deteriorates the human race; that it may be the means by which diseases are communicated to healthy persons; and lastly, that it may cause the development of various diseases in the body, which would otherwise have remained quiescent or latent. As regards the first point, of course only those diseases could be communicated which are known to be capable of such transference from one person to another. Thus it has been maintained that scrofula has been communicated by the vaccine lymph; but it must first be ascertained that scrofula is communicable. We know very little of scrophulosis, but that little is in opposition (?) to the possibility of its transference in this manner from one person to another; and in opposition to such statements the opinion of Jenner may be advanced, that many diseases have become considerably less virulent since the introduction of vaccination. Jenner maintained that rachitis was not so severe as formerly, and Lachmund is of the same opinion in regard to hooping-cough. Again, the direct experiments of Heine and Pustier seem to show that no diseases are transferrible through the vaccine lymph. In regard to its causing the development of previously latent disease, it is difficult to make any precise statement, and it is unquestionable that it often excites much irritation in the body. And now comes the question, whether syphilis can be transmitted through the vaccine lymph. This question leads logically to another, *i.e.* whether syphilis, that is to say, not primary but constitutional, is communicable. In the fifteenth and subsequent centuries, when the ravages of syphilis were so frightful, no doubt was enter-

tained upon the subject, and Ulrich of Hutten and Erasmus of Rotterdam wrote treatises upon it. But more recently the view has been regarded as mythical, especially after Hunter and Ricord had declared against it, until the modern experiments of Waller and Overbeck had incontestably established it as a fact. In considering the point whether constitutional syphilis can be communicated by vaccination, M. Auspitz adduced a number of different outbreaks, of which the following are the chief. In 1807, Moseley and Monteggia observed appearances after vaccination which closely simulated syphilis. More recently, the vaccinator Hubner provoked an outbreak which led to a careful investigation of the whole subject, and Hubner was punished. In 1852, Lecord published cases of vaccine syphilis in two soldiers, but ascertained that in obtaining the lymph the lancet had been pushed in so deeply as to draw blood. At a later period the epidemic of vaccine syphilis at Rivalta made a great sensation, where syphilis was communicated to eighty children by vaccination, of whom eight died. Here also it was ascertained that not only lymph but blood was abstracted from the patient who supplied the lymph. Lastly, there was an epidemic at Bezières, in which the contamination of the lymph with blood was ascertained to have taken place. From these various well-authenticated cases there can be no doubt but that syphilis may thus be communicated. It now demands to be investigated by what process the syphilis contagion of the vaccine lymph is effected. Is it that the vaccine lymph itself, in passing through the body of a person suffering from secondary syphilis, becomes so modified as to be capable of communicating the disease? Such a view is not in accordance with the numerous investigations of Hayfelder and Latour, who found, in many experiments with vaccine lymph from syphilitic patients, that in no one instance was the syphilis propagated; still less is the view admissible that the transference is effected in a mechanical mode by impurity of the vaccine lancet, &c. The only remaining view is, that in the cases where vaccine epidemics have broken out, the lancet has dipped into the blood of the patient, which has thus contaminated the lymph abstracted from him. This, as above shown, was ascertained to have taken place in every instance when an outbreak occurred, whilst the experiments of Viennois, Köbner, and Gambanini have abundantly proved that the blood of syphilitic patients will communicate the disease when introduced from the affected person into another. Four inquirers have also made direct experiments to elucidate this point—Sperino and Baumé in Turin, Friedinger in Vienna, and Bök in Christiania. Two series of experiments have been made. In the first, vaccine lymph was mingled with the fluid of a soft chancre; a true chancre was produced, the develop-

ment of which, of course, covered and concealed the vaccine process. In the second series the Hunterian chancre was used, but no definite results were obtained in eleven cases. Hence the theory of Viennois remains the most plausible, that in cases where syphilis occurs through vaccination, it results from some of the blood of the affected person being taken, with which the sound patient has been inoculated. There certainly are cases on record in which no blood has been taken; but this scarcely constitutes a strong objection to the theory. The chief difficulty, perhaps, is in respect to the period of incubation, which instead of being, as usual with constitutional syphilis, from two to three weeks, is here only ten days. (*Allgemeine Wiener Medizinische Zeitung*, Nos. 20 and 22.)

Treatment of Croup.—Dr. Fordyce Barker, after defining true croup, and distinguishing between it, "spasmodic" croup, and diphtheria, considers that success in the medical treatment of this disease depends in a great measure on the use of efficient remedies in the very commencement of the attack, whilst in an advanced stage, when life is in jeopardy from asphyxia, the main reliance must be upon tracheotomy. He always commences the treatment by an emetic of turpeth mineral (hydrargyri sulphas flava), in doses of from three to five grains, according to the age of the child. If it does not act in fifteen minutes, which is a rare event, he directs a second powder to be given. He prefers this emetic on account of its prompt action, its tastelessness, and facility of administration, and the absence of any subsequent depression. It is also much more effective as a revulsive and sedative than the sulphate of copper, depleting the mucous membrane by the abundant secretion of mucus that is thrown up, and removing from the larynx, by the forced expiration that it causes, in any albuminous or fibrous exudation which may be there in a diffluent state. The following morning, if the child have a quick pulse, hot skin, hurried breathing, and an occasional ringing cough with no thoracic râles, he directs that it shall be kept quiet in bed, and prescribes the veratrum viride tincture with spirit of nitric ether in one or two drop doses, increasing or diminishing it every eight hours, according to its action on the pulse. If thoracic râles be present, he adds a little syrup of tolu and carbonate of ammonia. Sometimes in the advanced stages of croup, when the respiration is hurried and irregular, and the cough husky, with less marked paroxysms, he substitutes large doses of quinine with senega and ammonia. (Pamphlet forwarded by the Author.)

Radical Cure of "Ingrowing Toe Nail."—Dr. Trueheart, of Texas, believes that "the operation advised by many of the text-books on surgery for the cure of this intractable and exqui-

sitely painful and troublesome affection—that by slitting the nail through longitudinally, and then tearing away the whole or the lateral offending portions—is, I believe, notoriously ineffectual. During the weeks, or even months, that elapse ere the formation of the new nail, the patient is greatly incommoded in wearing a shoe or walking, by the extreme sensitiveness of the unprotected toe; and the new nail is generally as faulty in its growth as the one removed.

"The plan of treatment by scraping the centre of the nail down to the quick (or cutting out a V-shaped piece), and then elevating the edges of the nail by pushing lint under; and that by drawing the impinging soft parts away from the edges of the nail, by means of adhesive strips, are well suited for the relief of the less aggravated of that class of cases due to an encroachment and excessive pressure of the soft parts upon the nail, but are quite inadequate for the cure of the more severe cases, especially where there is an abnormal width of nail, congenital or acquired.

"A little method of operation which I have resorted to with most satisfactory results in six out of eight very severe cases in which it was made, may perhaps prove of interest and value to the profession. It consists in the removal of the lateral offending portions of the nail, and the *thorough* extirpation of the matrix pertaining thereto; the central half or two-thirds of the nail being preserved intact, to serve its function of protecting the toe.

"The patient should be anæsthetized. An incision is made on one or both sides of the toe (as the case may demand), extending from the posterior border of the nail six or eight lines back towards the foot, care being taken to avoid opening the adjacent joint of the toe. A thin flap of integument, including as little as possible of the matrix, is dissected up. The sharp-pointed blade of a straight scissors is thrust under the nail, cutting it through from base to free border, and the strip of nail thus detached, with the tissue beneath and at its root, *carefully* and *thoroughly* dissected out, down to the very periosteum, so as to include all the matrix concerned in the development of that portion of nail.

"The flaps should be brought together by adhesive strips. Any excess of granulation present having been pared off, the integument of the lateral aspects of the toe should be drawn over to the newly established edge of the nail, so as to cover the wound surface made by the excision of the nail, and held in place by adhesive strips. To facilitate this, it will in some cases be advisable to dissect up the integument on the side of the toe for a few lines.

"Where much inflammation of the parts exists, it is decidedly

best to reduce it before operating; and this is most effectually and quickly attained, and with least loss of time to the patient in the end, by a few days' rest in the recumbent position, elevation of the foot, with the use of cold lotions, &c.

"In the cases referred to above, the patients were able to walk about and wear a loose shoe with comfort in six to ten days. The two cases of failure were due to an incomplete extirpation of the matrix. (*The Medical Record*, July 1, 1870.)

Treatment of Scarlet Fever and Subsequent Dropsy by Hydropathy.—The observations of M. Pilz are directed to the determination of two points: first, the action of cold baths in lowering the temperature in scarlet fever; and, secondly, on the action of hot baths in removing the dropsy. In regard to the first point, his observations were made on twelve severe cases, for the most part complicated with diphtheria. The children were immersed for from eight to ten minutes in a large bath, at a temperature of 77° Fahr., the skin being vigorously rubbed, the bath being repeated as often as the temperature rose to 101° or 103°, so that many patients were bathed every hour. Forty-two per cent. of these bad cases died, whilst all the remaining ones, as soon as the water system was adopted, recovered. The depression of temperature produced was always small, not exceeding 1°. The pulse and respiration also fell but slightly. It was observed that in none of the cases treated with cool baths did dropsy occur. In the second set of experiments the effects of warm baths in removing dropsy after scarlet fever was tried. The temperature of the baths varied from 96° to 104° Fahr., and they were immersed for half-an-hour; the after perspiration endured for two hours. The first few baths were found to produce the greatest effect, as was demonstrated by careful weighing, and upon the whole their effects were beneficial. Experience showed that cases of pulmonary and cardiac disease required careful watching, and that there was danger when the loss of weight after the first bath was very great. (*Jahrbuch f. Kinderheilk., N. F.*, p. 253.)

The Treatment of Epilepsy.—Dr. Jansen relates the results he has obtained from comparative experiments made with bromide of potassium, belladonna, valerian, and the cold water system. It is remarkable that he makes no allusion to the oxide and lactate of zinc, the action of which is as efficacious and persistent as bromide of potassium, whilst it has not the disadvantage of causing disturbance of the intellectual faculties. The water cure, which may fairly be associated with the latter, requires much care and circumspection in its use. M. Jansen considers that it is rarely possible to obtain a complete cure

of well-marked epilepsy, though some improvement in the frequency and violence of the attacks may be looked for. On the other hand, we may often effect a perfect cure of epileptic vertigo. In almost all cases a considerable amount of perseverance in the use of remedies is required. (*Annales Médico-psychologiques*, 1870.)

Intra-uterine Medication, its Uses, Limitations, and Methods.—Dr. Peaslee remarks that applications to the canal of the cervix uteri are universally accepted by gynæcologists at the present day as indispensable in uterine therapeutics. To facilitate description, he proposes the use of the term endometrium to indicate the lining membrane of the uterine cavity. He describes the various instruments, syringes, &c., that should be employed, and observes it should be known that pure water is not the least irritating of fluids, as seems to be generally supposed, in its action either on serous or mucous membranes. A weak solution of common salt, twenty to sixty grains to a pint of water, is much less irritating than pure water when applied to the eye, nasal passages, uterine cavity, or even to the peritoneum. When used, the injection should be at blood-heat, and should be introduced very slowly, carefully, and without force. The quantity injected should not exceed ten to fifteen drops in a virgin, and from twenty-five to forty in the case of a woman who has been a mother. The return of any overplus of water injected should be secured by previous dilatation of the cervical canal by sponge tents, or laminaria, or steel bougies. The uterine affections not consequent on recent parturition, in the treatment of which these applications are especially appropriate, are metrorrhœa (or uterine catarrh) and metrorrhagia, though, when these are dependent on displacement or tumours, the primary cause should be removed. The principal fluids he recommends to be employed are weak solutions of sulphate of zinc, alum, tannic acid, and sulphate of copper; the tannate of glycerine, iodine and glycerine, very weak chromic acid, and when the endometrium is very irritable, a solution of chlorate of potash may also be employed. In cases of metrorrhagia, the persulphate of iron, or the perchloride, bears the palm. (*New York Medical Journal*, No. 5, 1870.)

The Rational Treatment of Dysentery.—Dr. August Dyes, of Hildesheim, observes that dysentery, formerly regarded as a catarrho-rheumatic affection of the mucous membrane of the intestine, is now considered to be an infectious disease, although the nature of its miasm has not been determined. Now, since sulphate of iron and chlorine have long been regarded as disinfecting agents, it was natural to presume that, in the event of the disease depending on a specific miasm, these agents might

prove serviceable, and he has ascertained that, in fact, they possess a very powerful curative action, not only in dysentery, but in scarlet fever, diphtheria, autumnal diarrhœa, typhus, cholera, and measles. (*Deutsches Klinik*, July 23.)

Treatment of Acne by the Internal Administration of Glycerine.—It appears to be well established that the modes of elimination of medicines are fixed and definite; thus the kidneys eliminate the neutral salts; the bronchial mucous membrane and the sudoriparous glands, volatile substances; the biliary ducts, metals. By inductive reasoning the sebaceous glands serve as channels for the elimination of the fats. M. Gubler has endeavoured to verify this hypothesis by clinical experiment, and the following fact appears to confirm it. A young girl affected with acne punctata which had resisted various methods of treatment, such as borax and glycerine applied topically, was at length treated by the internal administration of glycerine, in the dose of two dessert-spoonfuls per diem, in the hope that this substance, so analogous to the oils, would, like them, follow the ordinary modes of elimination, and in traversing the sebaceous follicles would modify their secretion, rendering their products more fluid. The result supported the theory. From the day that the remedy was first taken the pustules diminished in volume and number, and soon disappeared altogether. The bowels, which had previously been costive, were rendered open and regular, though the glycerine by no means acted as a purgative. M. Gubler suggests its use in cases where the cerumen has accumulated in the ear. (*Lyon Medicale*, 1870.)

Notes and Queries.[1]

CORRESPONDENCE.

Castration in Epilepsy.—Dr. Mackenzie Bacon sends us the following:—"In the *Practitioner* for June 1869, I mentioned a case in which I had removed the testes of an epileptic lad in whom I had reason to think the fits were mainly due to sexual excitement, kept up by his bad habits. At the time I wrote six months had elapsed since the operation, and a marked improvement had been observed.

It may be interesting to give the sequel, as eighteen months have now passed by, and this period is probably sufficient to test the influence of the operation on the epileptic state.

The results are as follows. The lad has improved in health and general condition; is fat, and weighs 11 st. 4 lbs., as against 8 st. 9 lbs. eighteen months before.

He has considerably improved in intelligence, and is able to make himself useful in simple work.

He has ceased to masturbate, and seems to have no sexual inclination, but there is no apparent effeminacy of character. He used to have the fits several times a week, but since the operation the frequency of his fits has been diminished thus:—In January 1869 he had 2 fits; February, 2; March, 1; April, 2; May, 4; June, none; July, none; August, 3; September, 4; October, 1; November, 1; December, 2. January 1870, none; February, 2; March, none; April, 1; May, 2; June, 1.

In my opinion, the above facts are enough to prove that the operation was in this case successful, and I remain convinced, for the reasons I gave in my former paper, that it is one which might be performed with vast benefit on a number of the insane epileptic class."

Treatment of Chronic Diarrhœa in Children.—Dr. W. Murray, Newcastle-on-Tyne, writes as follows:—"I have just read the able article of my friend and former colleague, Dr. Eustace Smith, "On the Treatment of Chronic Diarrhœa in Young Children," and I cordially agree with his remarks, except in one particular. He advises the administration of alkalies in

* The Department of New Inventions is postponed till next month, from extraordinary pressure on our space.

diarrhœa, with acid fermentation of the food, and holds that the soda and potash check this fermentation. For the last six years we have been carefully observing a number of such cases at the Newcastle Children's Hospital, and my colleagues have assured me that their experience confirms my strong recommendation of pepsin and hydrochloric acid as the remedy for all such cases. The effect of this combination is to digest the child's food before it has time to ferment, and to promote its assimilation. All wasted children, with loose bowels, passing undigested food, should in my opinion be put on a nitrogenous diet with pepsin and hydrochloric acid."

Sarsaparilla in Syphilis.—Mr. J. G. Da Cunha, of Bombay, sends us the following:—

"I have read in the *Practitioner* an article by Dr. Clifford Allbutt on the use of sarsaparilla in syphilis, in which that gentleman advocates the use of this drug in large doses, and concludes thus: "I hope soon to hear that our practice has been found useful by our brethren elsewhere."

I shall avail myself of this opportunity, then, in bringing forward my own experience on this subject. My acquaintance with the use of sarsaparilla in the form of a decoction in large doses first began about ten years ago, when I was at Goa, and where the plant thrives luxuriously in the low jungles on the slope of the Western Ghauts, and in the hilly regions facing the coast. I believe the true name of the plant is *Smilax ovalifolia*, Roub. (Wight, Icones, vol. iii. t. 809), similar in all its physical characters to Vera Cruz sarsaparilla. In that place its use is almost universal among people suffering from skin diseases, and I have known it to prove efficacious. The revelation of its well-recognized anti-syphilitic virtues, however, dates from a more recent time.

Since I commenced my practice in Bombay, I am in the habit of prescribing the decoction of sarsaparilla in syphilitic cases in doses of from four to eight ounces three times a day, and the success has been more than equal to my expectations.

The following are short notes of a few cases, among a large number, in which the treatment has been adopted. I shall, however, for the sake of brevity, describe only the salient features of each case, leaving the whole array of unimportant details aside.

R. B——, aged 30, has a sluggish, foul, circular ulcer, of the size of a rupee, on the front and middle part of the right tibia, and three more at some distance from the sore. He looks very pale and emaciated. This patient took decoction of sarsaparilla for only a fortnight, and the ulcer healed and the nodes disappeared.

D. B——, aged 26, has a large irregular patch of psori-

asis on the palm of the left hand, and numerous copper-coloured blotches on the legs. Complains also of severe headache every alternate day. Took decoction of sarsaparilla with sulphate of quinine for one month; is now quite recovered.

J. C——, aged 15, has two large ulcers; one on the wrist of the right hand, and the other on the coccygeal region; they both look very indolent, and discharge very fœtid matter. Simple dressing was applied to the sores, and decoction of sarsaparilla administered internally in four-ounce doses thrice daily. After taking the medicine for one month the dose was increased to eight ounces, and within two months she was quite well. This girl was confined to her bed suffering from these ulcers for about two years previous to her coming under my treatment, and although treated by two other medical gentlemen, derived no benefit from any medicine except the sarsaparilla. I saw her the other day, almost eighteen months after treatment. She is quite well; the ulcerated surfaces are cicatrized, and she seems to enjoy a robust health.

N. C——, aged 24, has been confined to his bed for the last three years; has been treated by most practitioners of the locality. Does not confess to having contracted syphilis. Has two big ulcers of a very foul and indolent nature on the right arm and left leg; is unable to move the limb; the joints are swollen and quite stiff; cannot bend even a finger. I put him at once on the sarsaparilla treatment of four-ounce doses, increased to eight, three times a day. He took this medicine for three months, and was perfectly cured. Sores were healed, could move the limbs, and looked sound in health. At present he pursues his daily avocation, walks about well, and has all the joints in good order except the knee, which is rather stiff, and feels sometimes painful.

In most instances, while giving the sarsaparilla, I am in the habit of adding from three to five grains of iodide of potassium to each dose, when the patient can bear it, besides adding two or three grains of quinine, which seems to me quite necessary, under what I think a well-founded belief, that most of the diseases of this climate have a malarious ingredient in them. This has always borne good effects, as the periodical pains my patients have been complaining of have subsided under the use of quinine.

I beg now to close this article, really rejoicing that Dr. Allbutt should have come forward and published the results of his vast experience of sarsaparilla treatment, and thus afford me an opportunity to contribute my own insignificant mite towards the same end."

[A quantity of correspondence is unavoidably postponed.]

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[1] Any of the foreign works may be procured by application to Williams and Norgate, of Henrietta Street, Covent Garden, W.C.; or Messrs. Dulau, of Soho Square, W.C.

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THE TREATMENT OF THE INSANE WITHOUT MECHANICAL RESTRAINTS.

BY HENRY MAUDSLEY, M.D.

Towards the end of his life the late Dr. Conolly was wont frequently to express his fear lest there might at some future time be a recurrence to the practice of using mechanical restraint in the treatment of the insane. Recent events have shown that his apprehensions were not so vain as they then appeared. The injuries that have occurred to patients in some of our large asylums have caused certain writers to hint doubts of the value of the so-called non-restraint system, while others have gone so far as to advocate openly the use of the strait-waistcoat. They would have us give up a system of treatment which has been considered by English alienists to be the great merit of English asylums, has hitherto been zealously defended by them against the attacks of foreigners, and has now become so general, that there is hardly an asylum in this country in which a strait-waistcoat would be found. I cannot help thinking that those who contemplate such a retrograde step have failed entirely to grasp the principle upon which the non-restraint system is founded, and that in this matter they are very ill adapted to be public instructors. It seems proper that an earnest protest

should at once be put on record against doctrines which I believe to be inhumane and unscientific, in order to prevent the harm which their adoption would in no long time assuredly entail.

It would be an easy thing to fasten an insane person's limbs, so that he need not be much trouble to those who have the care of him; and if that were proper treatment, not much skill would be required to carry it out. Attendants, for the most part, would be glad enough to have recourse to a measure which would obviate the necessity of patience, forbearance, and watchful supervision on their part. It might be no small relief too to the mind of the physician in charge of an asylum to know that a troublesome patient was effectually secured from doing harm to himself or others, and that he need feel no anxiety on account of the possible negligence or impatience of his attendants. The real question, however, is whether the patient would be a gainer by such a method of rendering him harmless. Past experience certainly does not favour the opinion that he would, but, on the contrary, affords strong reasons to believe that he would suffer much injury without any compensating benefit. The system of mechanical restraint has had a full trial in this country, and in other countries, and whosoever may desire to see it tried again would do well, before giving utterance to his wish, to read carefully the accounts of the cruelties and horrors disclosed at the inquiries into the conditions of asylums at the beginning of this century. By its fruits let it be judged. And if the honest inquirer would have a personal experience of the soothing effects of mechanical restraint, let him try, on some warm summer's night, when tossing about restless and feverish from bodily or mental suffering, to go to sleep in a strait-waistcoat, with the sleeves of it tied together under his bed. If he were discovered in the morning, as most probably he would be, on the border of acute mania, or actually maniacal, he would furnish an apt illustration of the effects of mechanical restraint in making madness. For it is most certain that the horrible type of furious mania, which was common enough in olden times, is seldom, if ever, met with in our asylums now, simply because the old system of restraint has been abolished. The yelling and the howling, and the violence, which were thought to be inseparable from insanity, are not witnessed now in asylums, because the

insane are not brutalized by degrading restraints. In fact, exhibitions of madness were then witnessed which are no longer to be found, because they were not the simple produce of malady, but of malady aggravated by mismanagement.

It should be borne clearly in mind that the abolition of mechanical restraint is not itself a principle, but a detail of practice founded on the principle which inspires what is called the non-restraint system. A very bad system of moral management might prevail where no actual corporeal restraint was used, and, on the other hand, it is possible, though not probable, that means of restraint might be used occasionally, and yet the management of patients be in other respects good. To scold, bully, or punish an insane patient would be almost as injurious to him, and certainly as contrary to the true principle of the non-restraint system, as to apply mechanical restraint. Experience proves most decidedly how beneficial is the influence of a good attendant, how pernicious is the influence of a bad attendant, on a patient suffering from mental disorder; the patient will degenerate under the indifference and harsh usage of an ill-tempered person as plainly as he will improve under the sympathy and gentle behaviour of a kind and considerate person. I have more than once known instances of patients who have, without exaggeration I may say, been cured by a judicious change of attendant. The greatest of difficulties, indeed, in the treatment of the insane is to obtain suitable persons to fill this trying and most responsible position. Qualities of head and heart are demanded such as would secure for their possessor higher remuneration and less onerous duties in a more eligible vocation. The accidents and injuries in asylums, which have lately excited so much attention, have indicated the weak point in asylum management: the want of a properly trained and high class of attendants, and of an adequate supervision of these immediate guardians of the insane by officers of a higher standing. It is to be feared that patients are in some instances left too much at the mercy of attendants. Now to leave an insane person at the mercy of a coarse, violent, and ignorant attendant, is to adopt the surest way of rendering him furious, unmanageable, and finally incurable. With his delusions of suspicion or fear he mingles inseparably the realities of the

treatment to which he is subjected, and if this be at all harsh and unsympathetic, he naturally becomes furious, and resists it with all the energy of his frenzy. His delusions are thus strengthened and fixed, whereas, by gentle usage and sympathetic attention, his confidence is gained, and they are gradually undermined. Angry usage, nay even an angry word, sometimes does incalculable mischief. It is easy to perceive that if a patient imagines himself to be in hell, or about to be murdered, and those around him to be devils or murderers, as happens now and then, he is not likely to be disabused of his morbid idea by devil-like treatment. The principle of the non-restraint system, in the true acceptation of the term, is, whilst avoiding a meddlesome interference, to make all the surroundings of the poor lunatic as tranquil, as orderly, as gentle as may be consistent with his proper care, to counteract the commotion in him by an absence of commotion in what is around him. The lunatic cannot, any more than the sane person, resist the steady influence of his surroundings; he assimilates them unconsciously, and they modify his character for good or for evil.

How little a system of mechanical restraint fulfils the conditions of the just principle of treatment is so plain that a wayfaring man, though a fool, can hardly fail to see it. An exited, active patient, urged by an uncontrollable instinct of movement, desiring and needing above all things freedom of limbs, is secured hand and foot by mechanical appliances; with what result? That he is provoked into furious mania, expends his energy in shouting and raving, and becomes dirty in his habits;—dirtiness in some shape is, in fact, unavoidable under such circumstances. But it may be argued, as it is sometimes argued, that it would be better for the patient to be so restrained mechanically than to be restrained by the efforts of attendants, who, in the excitement of struggling, are apt to overpass the limits of a temperate exercise of force, and to proceed to passionate acts of violence. No doubt, if it were necessary to have such struggles where restraint was not used, and not necessary to have them in order to apply restraint, there would be something to be said in favour of its use. But it is very seldom necessary to have a physical contest with a patient; indeed, if contests of the kind were of frequent occurrence, it would be

strong evidence of a bad moral tone in the management, and of a neglect of proper medical treatment. If the whole treatment of acute insanity consisted, as some persons seem to imagine, in mastering the patient by physical force, and in endeavouring to stifle excitement by means of opium and other sedatives, there can be little doubt that violent struggles and restraint in some form or other would be found necessary. But if an indiscriminate use of sedatives be avoided, and a rational medical treatment be directed to the bodily disorder which will commonly be found to accompany mental derangement; and if, furthermore, the moral management be sympathetic and prudent; it will seldom be necessary to resort to physical violence.

Let it not be supposed, moreover, that the imposition of mechanical restraint does away with scenes of violence. Far from it; it encourages them. Much violence must usually be used in order to apply the means of restraint, a desperate contest occurring before the patient is overpowered and left helpless, exhausted, and furious, with a bitter sense of degradation. Such struggles breed similar struggles, and the restraint used necessitates a frequent recurrence to it. There can be no greater fallacy than that of supposing what is called a moderate use of mechanical restraint to be consistent with a general plan of treatment, in other respects humane and beneficial. It must be dispensed with altogether, or deterioration will ensue in the patient, and all kinds of neglect and tyranny will be engendered by degrees, until restraints become the usual substitutes for forbearance and watchful attention. As one great argument against slavery was that it demoralized the slaveholder, so a very bad effect of the employment of restraint in dealing with the insane is that it demoralizes attendants. And on this ground, if there were no other grounds, it is necessary that the abolition of restraint should be absolute to be efficient; the principle of the non-restraint system will admit of no compromise.

It must be allowed that when called to treat an acute case of insanity in a private house, it is not always so easy to do without restraint as it is in an asylum, where there are suitable appliances for meeting the difficulties which the excitement and violence of a patient may present. But if a medical man finds

it absolutely necessary to employ mechanical restraint, he should, if he has the welfare of his patient at heart, send him elsewhere; for either it is not a fit case for private treatment, or he is without the requisite assistance and qualifications for treating it properly. The attendants on whom he depends are probably ignorant and incompetent. If he has obtained them by application to some of those advertising institutions which profess to supply trained nurses, for all sorts of cases, knowing nothing himself of their character and attainments, the chances are great, that they are of a very bad type, either having had no proper training, or having been discharged from asylums. It is within my knowledge that, in some instances, attendants discharged from asylums for negligence and ill-treatment of patients have unhappily obtained employment, either directly from medical men, or indirectly through the medium of an advertising institution. One institution of this kind was, in fact, established by a discharged attendant, and was the refuge of a class of persons, some of whom, if they had found their right place in the world, would have found it on the treadmill. No wonder if mechanical restraint appear necessary where such persons get employment as attendants. They have done so, however; they are doing so still, and, it is to be feared, will continue to do so in the future. It would be a grievous error to accept the evil results flowing from their inhumanity or incompetency as evidence against the worth of an enlightened and humane practice.

It should be clearly understood, by those who feel any doubt of the value of the non-restraint system, that although it is not fully adopted in foreign asylums, it has been warmly advocated by the most eminent foreign alienists who have witnessed it in operation in English asylums. Morel, of Rouen, after living some time in an English asylum, in order to make himself practically acquainted with its working, became, and has since been, one of its warmest supporters. The late Professor Griesinger, who, once an opponent of non-restraint, made a journey to this country specially to examine into its merits and alleged demerits, became an earnest defender of it, and applied it with great success in the asylum connected with the Charité at Berlin. Ludwig Meyer introduced it with the most beneficial results

into the asylum at Hamburg, over which he formerly presided. Others have followed, and are following, in the wake of these distinguished men. With such testimony coming from abroad, it is somewhat sad to find that doubts should arise in the country in which the non-restraint system had its birth, and has attained its fullest development. I cannot think that, in face of the irrefutable evidence of experience, they will have a long vitality, and I certainly do not hesitate to express a strong personal conviction that the use of mechanical restraint in any asylum, public or private, is an indication of a badly managed institution, and that its use, in the treatment of private cases, is unnecessary and prejudicial. Where it is entirely dispensed with, there will be less excitement, fewer scenes of violence, less need of secluding patients, and earlier and more numerous recoveries than where it is in use. For it is not only an evil itself, but it is the fruitful parent of a multitude of ills, not the least of which is the certain deterioration of all who have any part in its employment, whether suffering or doing.

EXPERIMENTAL INVESTIGATIONS INTO THE ACTION AND USES OF GELSEMIUM SEMPERVIRENS.

BY ROBERTS BARTHOLOW, A.M., M.D.

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Gelsemium is included in the "Secondary List" of the U.S. Pharmacopœia. It was originally introduced into medical practice by the physicians of southern United States, but unfortunately, its mode of action and the character of cases to which it was applicable not being well understood, it did not come into general use. The so-called "Eclectics" adopted it into their Materia Medica, and much of the information in regard to its therapeutical effects now current was derived from them. Recently, however, the attention of the regular profession has become more fully awakened to the value of gelsemium as a remedial agent, and various articles setting forth its virtues have lately been published. Hitherto its physiological action has not been submitted to systematic examination. Very recently its chemical constitution has been accurately determined by Prof. Wormley, of Columbus, Ohio.[1] To ascertain whether the alkaloid he had isolated possessed the toxic activity of the plant, Dr. Wormley injected a solution of the chloride of gelsemia under the skin of a cat, and in this way observed some of the physiological effects; but he extended his researches no further in this direction.

Preparations.—There are no officinal preparations of gelsemium. Two tinctures, a fluid extract, and the so-called gelsemin, are, however, to be found in the shops in this country.

The tinctures differ in strength and in mode of preparation.

[1] *American Journal of Pharmacy*, January 1870.

The common tincture is obtained by simply macerating four ounces of the fresh root in a pint of diluted alcohol. The dose of this ranges from ten to thirty drops. The "concentrated tincture," which is a more eligible preparation, is obtained by the process of displacement *in vacuo*. The dose of this is from five to twenty drops. Under the term "specific medicines" this concentrated tincture of gelsemium is issued, together with other remedies of our indigenous Materia Medica, by a leading Eclectic teacher and practitioner of Cincinnati.

A good fluid extract of gelsemium may be obtained by the same process as the concentrated tincture is now prepared; but as it is liable to spontaneous changes, it is not so well suited for dispensing as the tincture.

The so-called "resinoid gelsemin," which is also much employed by Eclectic physicians, is a very faulty preparation. It is prepared from the tincture in two modes: by precipitation, and by evaporation. The latter method, if carefully conducted, may furnish a product containing some of the alkaloid, but the former method only separates the resin, which does not possess the medicinal activity of the plant. Gelsemin, as found in the shops, has a shining resinous or vitreous appearance, a brownish colour, and presents on fracture a yellowish, granular aspect. In powder it is yellowish in colour, bitter to the taste, and has a faint odour of gelsemium. Although I have made numerous trials, I was unable to procure with gelsemin the physiological effects of gelsemium. Freshly prepared by careful evaporation it may retain a portion of alkaloid, but as found in the shops it is unworthy of confidence, and should not be employed in medical practice.

The activity of gelsemium depends upon the presence in it of a peculiar alkaloid—gelsemia, or gelsemine—which exists in the root in combination with gelseminic acid. Although, as I have stated, Dr. Wormley is really the first to have worked out successfully the chemistry of gelsemium, the presence in it of an alkaloid of great power has long been suspected. Kollock in 1855, and Eberle in 1869, had indicated the existence of gelsemia, but neither satisfactorily determined its chemical relations. Before Dr. Wormley's investigations, no one had demonstrated the existence of the new organic acid, gelseminic acid.

The following description of the physical and chemical properties of gelsemia and gelseminic acid is taken from Dr. Wormley's valuable paper.

"In its pure state, gelseminine (gelsemia) is a colourless, odourless solid, having an intensely persistent bitter taste. Thus far we have failed to obtain it in the form of well-defined crystals. It has strongly basic properties, completely neutralizing the most powerful acids, forming salts, of which the sulphate, nitrate, chloride, and acetate are freely soluble in water.

"In its pure state, gelseminic acid is a colourless, odourless, nearly tasteless solid, which is readily crystallizable, usually forming groups or tufts of delicate needles. It has strongly acid properties, completely neutralizing bases and uniting with them to form salts, most of which, except those of the alkalies, are at most only sparingly soluble in water. The salts of the acid having an alkaline base are very freely soluble in water, and are crystallizable. The pure acid is freely soluble in chloroform and in ether, but only sparingly soluble in water, requiring about one thousand times its weight of this liquid for solution. It is much more freely soluble in hot water, from which, however, the excess immediately begins to separate in the form of long, slender needles, as the solution cools."

When Professor Wormley's paper appeared, I had already completed a series of investigations into the physiological action of gelsemium. Notwithstanding I had operated with an aqueous solution of an extract prepared with great care by Mr. Wayne, an eminent pharmaceutist of this city, it seemed to me to be necessary to complement my previous investigations with some new researches with the alkaloid. Professor Wormley was kind enough to send me a specimen of gelsemia which he had himself prepared. In a second series of experiments with this, I ascertained that the effects which I had previously obtained by the solution of the extract corresponded substantially with those procured by gelsemia.

Physiological Effects.—I have studied the action of gelsemium on cold and warm-blooded animals and on man. Frogs are very susceptible to its action; and as these animals are best adapted for this purpose, I have made numerous experiments with

them to determine the action of gelsemium on the nervous system. I purpose to narrate now only those experiments which may be considered typical.

EXPERIMENT I. *Frog.*—Injected under the skin of the back ℥ss of the solution above mentioned. In ten minutes decided loss of muscular power; could not jump, but drew up hind extremities when placed in an inconvenient position. Apparently complete sensory paralysis, for no movements of limbs took place on application of irritants. In fifteen minutes there was complete motor paralysis, but the muscles (of calf) contracted on direct irritation. Opened chest by division of the sternum. Heart was found in action rhythmically, pulsating twenty per minute. At the end of one hour from beginning of experiment, the action of the heart continued at fourteen pulsations per minute. There was then complete motor and sensory paralysis. At the end of two hours the action of the heart had entirely ceased, but it could be made to contract by pricking.

It is necessary now to determine whether the sensibility of the motor or of the sensory nerves is first destroyed; whether motor paralysis commences at the centre or at the periphery; and lastly, whether the muscular irritability is affected.

EXPERIMENT II. *Frog.*—Passed a ligature around the thigh, including all parts except the sciatic nerve, which was carefully separated. Then injected fifteen minims of the solution of extract of gelsemium. In ten minutes the muscular movements were observed to be feeble, and the sensibility to irritants diminished. In twenty minutes sensibility to pain appeared to be abolished, but muscular movements could still be executed. Then pinching of upper extremity, a strong galvanic current, and chemical irritants applied to other parts excited no reflex movements in ligatured limb. Galvanic, chemical, and mechanical irritants applied to the sciatic of the ligatured limb induced active contractions of the gastrocnemius. Direct irritation applied below the ligature to the muscles of the ligatured limb also caused them to contract.

This experiment indicates that gelsemium destroys the excitability of the sensory nerves before the motor, that it does not impair the muscular irritability, and that its action as a paralyser is upon the centre, and not upon the peripheral nerve-fibres.

Experiment III. *Frog.*—Isolated the sciatic nerve, and applied to it the solution of the extract. Prolonged contact was necessary to impair the conducting power of the nerve, so that the result seemed to be due finally to the altered physical condition of the nerve-fibres, rather than to the special action of gelsemium. A muscle from the same frog, acted on by the solution, did not lose its irritability until after long contact.

Experiment IV. *Frog.*—Exposed the heart, and, making a small opening in the pericardium, introduced by means of a pipette some drops of the solution of gelsemium. Besides the disturbance of the movements of the heart, caused by opening the chest, and by the distension of the pericardium, there was no apparent influence of the gelsemium itself. The muscular irritability was not destroyed, for after it had ceased to act spontaneously, the heart could still be caused to contract by direct irritation.

The warm-blooded animals on which I experimented were pigeons and cats. I select a typical example from each class.

Experiment V. *Pigeon.*—Temperature of gullet, 107° Fahr.; respirations 48. Injected under integument of thigh thirty minims of the solution used in the foregoing experiments. At the end of five minutes voluntary movements—of walking—disordered; respirations 30 per minute, laboured, expiration jerking and prolonged. In ten minutes legs were paralysed, so that standing was no longer possible. Soon after wings were widely expanded, resting on the floor, and agitated by a succession of short tremors, which at length extended from the wings to the whole body. Eyelids partly closed. Still manifested consciousness, and attempted to move away head when approached. Sensibility was finally completely abolished, so that no form of irritant excited resistance or movement. Death occurred at the end of half an hour in a general convulsive tremor, in which the eyes were closed, the head drawn down, the feet extended backward, and the wings widely expanded. The action of the heart continued for several seconds after the total suspension of the respiratory movements. Just before respiration ceased, the thermometer introduced into the gullet indicated a temperature of 104° Fahr.

Experiment VI. *Kitten.*—Temperature of axilla, 102° Fahr.

Injected thirty minims of solution of gelsemium. In ten minutes head depressed, resting on fore-legs, which were doubled up; respiration laborious, expiration jerking, the abdominal wall falling in toward diaphragm suddenly; pupils dilating and yelids drooping; in attempting to walk fore-legs are weak and relaxed, but hind-legs are less affected; when tail is pinched, cat cries out and attempts, but ineffectually, to strike with fore extremity; lips and tongue are dry, and tongue is frequently protruded; keeps tail in constant vibration. In fifteen minutes after injection began a series of backward movements, which were repeated irregularly every few minutes. This backward movement is accomplished chiefly by the hind extremities, the claws of the fore-feet catching in the floor in consequence of the loss of power to retract them. The cat is yet conscious of impressions, for reflex winking of the eyelids takes place on touching ear and face, and she cries out when the tail is strongly pinched. At the end of twenty minutes the convulsive backward movements are more frequent and irregular; jaws are widely separated, mouth parched; fore-legs are drawn up and folded under the chest, and the hind-legs are rapidly flexed and extended, without, at last, moving the body. In thirty minutes after the injection there is complete muscular relaxation; respiration ceases, but the heart continues to beat for five minutes longer. Temperature of axilla before respiration ceased, 98° Fahr.

Comparing the observations on cold and warm-blooded animals, there is to be observed some difference in the order in which the phenomena occur. In warm-blooded animals the sensory survive the destruction of the motor functions, whereas in the cold-blooded the reverse is the case. In other respects, however, the action of gelsemium is very much the same in the two classes.

Observations on Man.—Very important information may be obtained by a study of the toxic symptoms in man. There have been several fatal accidents in the use of preparations of gelsemium, and the instances are quite numerous in which alarming symptoms have been produced without destruction of life.

The toxic effects of gelsemium on man are similar to those which I have demonstrated on animals. In cases in which alarming symptoms have been produced without continuing to a

fatal result, the following phenomena were observed: dizziness, dimness of vision, inability to raise the eyelids, a feeling of languor, great muscular weakness, a slowness of respiration, and feebleness of the heart's action. Dr. Wormley thus describes the symptoms in the fatal case reported to him:—

"In two hours after taking the dose the patient complained of pain in the stomach, nausea, and dimness of vision. These symptoms were soon succeeded by great restlessness, ineffectual efforts to vomit, and free perspiration over the body. At the expiration of about five hours the pulse was found feeble, irregular, and sometimes intermittent; there was great prostration, with irregular breathing and slow respiration. The skin was dry; extremities cold; the pupils expanded and insensible to light; the eyes fixed, and inability to raise the eyelids. The vital powers rapidly gave way, and, without convulsions, death occurred in about seven hours and a half after the poison had been taken."[1]

Dr. Wormley estimates the quantity of alkaloid contained in the three teaspoonfuls which produced death at about one-sixth of a grain.

There was nothing developed at the autopsy made by Dr. Stephenson to indicate the particular mode of action of gelsemium, except the condition of the heart and lungs. "The lungs were slightly collapsed," and the cavities of the heart "greatly distended with dark, grumous blood." These appearances coincide with the mode of dying in animals—by paralysis of respiration—the mechanical effect of which is to cause an accumulation of blood in the right cavities and in the large venous trunks.

The symptoms observed in the cases of accidental poisoning reported by Dr. R. P. Davis,[2] of Parkersburg (W. Va.), were similar to those which I have just quoted from Dr. Wormley's paper.

The first case, that of Mr. C. H. B——, presented the following appearances:—"He was lying upon his left side; face somewhat congested; pupils dilated, but responding to the different degrees of light; eyelids half-closed, with apparent inability to move them; lower jaw drooping, and his tongue, to use his own

[1] *American Journal of Pharmacy*, January 1870, p. 14.

[2] *Journal of the Medical Sciences* for January 1867, p. 271.

expression, 'was so thick he could hardly speak;' his skin was warm and moist, pulse small and feeble, and his respirations somewhat diminished in number. He had neither purging nor vomiting."

Mr. S——, the other victim, had taken the same quantity—a tablespoonful of Tilden's fluid extract of gelsemium. He complained of blindness, and staggered in walking; "was inclined to sleep, with deep inspirations, and a numbness of the whole body." In a private communication with which Dr. Davis has favoured me, he states that the pupils of both were widely dilated, and that both had double vision. Dizziness and vertigo were also experienced by both, but no impairment of intellect. Consciousness was not lost by S——, who recovered; but B—— was unconscious an hour before death. "Eyelids paralysed in B——'s case; only partially so in S——'s. Loss of muscular power in B—— complete; partially so in S——. Great numbness of the extremities. Action of heart very feeble; respiratory movements diminished in both cases." Dr. Davis describes the condition of Mr. B—— just before death as follows:—"Pupils widely dilated, spasmodic breathing, surface cold and congested, pulse almost imperceptible, and totally unconscious." There occurred no evacuation in either case except "cold perspiration." Death ensued in the fatal case in two and a half hours. As both had the same dose, it is important to ascertain the causes determining the fatal result in the one. There were two factors. Dr. Davis informs me in his letter that "Mr. B—— was a very small, nervous, delicate man, the reverse being the case with Mr. S——, he being a large, stout, and of sanguineous temperament." Further, being unaware of the fact that he had swallowed a poison, Mr. B—— was not given an emetic until absorption had fully taken place; Mr. S——, on the other hand, received an emetic soon after swallowing the poison.

When we come to analyse these cases, we observe a close correspondence in the symptoms which they present with the phenomena observed in animals. The toxic symptoms may be summarized as follows:—

Disorders of motility and sensibility.
Laboured respiration.
Weakened actions of the heart.

Dilated pupil; double vision; ptosis.
Intellect unaffected until near death.

The motor functions (staggering gait) appear to have been affected before the sensory (numbness). The laboured respiration is due to the paretic state of the respiratory muscles, especially of the diaphragm. The action of the heart, although feeble, appears to continue until the cessation of respiration. The depressed cardiac movements may be, and are probably, secondary to the diminished respiration, which acts by impeding the flow of blood through the pulmonary capillaries. The dilated pupils, the double vision, the ptosis, are unquestionably due to paralysis of the third pair. These are early symptoms of the toxæmia of gelsemium. The intellectual functions remain unaffected until carbonic acid poisoning comes on, when, of course, stupor and insensibility occur.

Summary of Physiological Action.—1. Being a crystalloidal substance, gelsemiate of gelsemia, the active principle, is rapidly absorbed into the blood.

2. It has a selective action on the nervous system.

3. It acts chiefly on the motor portion of the cord.

4. Its paralysing effect is due to its action on the motor centre, and not to an action on the peripheral nerve-fibres.

5. It acts also on the sensory portion of the cord, producing at last complete anæsthesia; but this effect in warm-blooded animals and in man is toxic only, and follows the paralysis of the motor functions.

Synergists.—All the paralysers are synergistic to gelsemium. In its physiological action, gelsemium corresponds more nearly to conium than to any other agent. Conium is a paralyser, but, unlike gelsemium, the paralysis commences at the periphery, and rapidly extends to the motor centre. Conium, like gelsemium, does not destroy the muscular irritability. Gelsemium impairs the sensibility of the sensory nerves, which conium does not. Both cause death by asphyxia—paralysis of the muscles of respiration. In their effects on the brain these agents act similarly. Neither destroys, *per se*, the functions of the brain, consciousness being preserved until carbonic acid narcosis supervenes. Both produce dilatation of the pupil and blindness; but gelsemium more distinctly paralyses the third pair than conium.

Antagonists.—The subject of physiological antagonisms is one of great interest and importance. I have, accordingly, devoted much time and labour to a determination of the supposed antagonists to gelsemium. It will suffice to present here the conclusions to which I have arrived.

A priori, nothing would seem more complete than the opposition in physiological effects of gelsemium and *strychnia*, throughout the whole range of their action, except in the rate at which they move to affect the system. Repeated trials on warm-blooded animals—cats and pigeons—have convinced me that there is no antagonism. An animal under the influence of gelsemium is quickly tetanized by strychnia. The same observation has been made by Guttmann, in regard to conia and strychnia. A toxic dose of strychnia proves fatal before the animal can be affected by gelsemium, if the two agents be administered simultaneously: hence it is necessary, in order to ascertain the existence of a supposed antagonism, to produce the full effects of gelsemium before administering strychnia.

As respects their physiological antagonism, there are many points of resemblance, and some points of difference, between *atropia* and gelsemium.

The dilatation of the pupil produced by both is due, in the case of atropia, to contraction of the radiating fibres of the iris; in the case of gelsemium, to a paretic state of the circular fibres.

In their action on the heart these two agents are antagonistic—atropia increasing the cardiac movements, and gelsemium diminishing them.

As both cause paralysis of the muscles of respiration, it is obvious that one cannot be used against the toxic symptoms produced by the other. By experiment we ascertain that this observation is correct. Atropia hastens the paralysing action of gelsemium on the respiratory muscles, but maintains the action of the heart for some minutes after the total cessation of the respiratory movements—much longer, indeed, than the heart continues to beat after stoppage of respiration, when gelsemium alone is used.

The opposite effects of gelsemium and *physostigma* on the pupil suggest an antagonism at other points in the range of their

action. It is found on trial, however, that physostigma does not overcome the dilatation of the pupil caused by gelsemium, a result apparently due to the powerful action of the latter as a paralyser of the third pair. As respects toxic effects, physostigma is synergistic to gelsemium. In my experiments on warm-blooded animals, I ascertained that death resulted more speedily from a fatal dose of gelsemium when physostigma was also administered.

I reserve for a future paper the very interesting subject—The Therapeutical Applications of Gelsemium.

ON THE ACTION OF MERCURY.

BY JAMES ROSS, M.D.

In therapeutics, as in other departments of investigation, what we want most is to gain a standpoint from which we can see things in their real connection and subordination, and thus give unity to a great many facts. There are no drugs which have a more extensive action upon the living body than the salts of mercury, and any theory which will reduce their various effects to some degree of order will do signal service to therapeutics. In constructing a theory of the action of mercury, I do not intend to include its topical action, nor its local action upon the alimentary canal anterior to its being absorbed into the blood. It is no more necessary to include these actions in the theory than it would be to discuss the theory of blistering when investigating the action of cantharides upon the body after absorption. It is probable that after absorption the salts of mercury assume the same form in the blood, since their effects upon the system are very much the same. Mercury effects many changes throughout almost the entire body. These effects are so well described in text-books that I need not detail them. I shall merely mention the technical terms that have been applied to the more marked and constant groups of symptoms. Mercury produces changes in the blood, mercurial fever, salivation along with inflammation, ulceration and sloughing of the gums, alveolar processes, and fauces, certain skin affections, inflammation of the periosteum and bones, especially of the joint ends of the long bones, inflammation of the serous membranes and of the iris, and various affections of the nerves, as neuralgia, tremor, and paralysis. It also may cause severe purging, and the bichloride of mercury seems to have a special action upon the mucous membrane of the stomach and rectum.

With regard to its action in disease, mercury has long been held in high repute in the cure of inflammation. It is not, however, equally useful in the cure of inflammation of all the structures of the body. Speaking broadly, it does no good, and may do harm, in inflammation of mucous membranes. It is of most value in sthenic inflammation attended with effusion of lymph, but even in those cases it may be positively injurious if administered at too early a stage of the disease, and in too large doses.

Mercury has also been employed extensively in the cure of syphilis and its consequences. Of its action in this disease it is enough to say that every form of it may be cured without mercury, but that it hastens the cure in many forms of the disease, that the occurrence of secondary symptoms is less liable to happen after its judicious administration, and that in certain forms of the disease this drug is very injurious.

Mercury has been given in other diseases with varying effects. But if we can arrive at a theory of its action which will account for its effects upon the healthy body, and upon the body when suffering from local inflammation and from syphilis, it is possible that we may be able to extend this theory in explanation of its action in other instances of disease.

Before making an endeavour to reduce these complicated facts to any degree of order, it is necessary to have a knowledge of the organism into the midst of which the mercury is introduced. It will suffice to refer to physiology for a knowledge of the laws which govern the body in health, and it would suffice to refer to pathological doctrines for a knowledge of the laws which govern the body when suffering from inflammation and from syphilis, did there not exist such a diversity of opinion with regard to the nature of these morbid processes. In consideration, therefore, of the divergence of opinions amongst pathological authorities, I must, in order to gain any degree of precision, briefly state my own views.

Inflammation is not a single state, but a series, which may be roughly divided into three stages. The first stage is an excess of the normal action of the part. But soon changes take place in it, which lead to a diminished nutrition; and this forms the second stage of the disease. In the third stage, or

rather stages, we may have various terminations, ranging from complete death, on the one hand, to restoration to health on the other. The most important point to notice in this stage, in a therapeutical point of view, is, that the diseased structure manifests a tendency to restore health; and even when gangrene takes place, this tendency is manifested, not of course in the dead part, but in the tissues surrounding it.

I must now briefly allude to syphilis. This disease is the result of a specific poison, whose action upon the body is supposed to be similar to the action of ferments. There is this similarity between them: both complete the arrangement or collocation of causes necessary to convert a *potential* into an *actual* energy; and hence it is that the effect produced in both cases is out of all proportion to the quantity of the cause. But if this is all the analogy between these two processes, the spark which explodes gunpowder, the tiny light which originates a great fire, the metallic contact which determines the discharge of a Leyden jar, and numberless other phenomena, are as much in analogy with the action of the syphilitic poison as is the action of ferments. In short, the analogy, though real, is far too general to be of much use. It is therefore necessary to search for other analogies, which will be, on the one hand, sufficiently general to enable us to take a wide and comprehensive view of the subject, and, on the other hand, not so very general as to be practically useless. I have long been of opinion that the true type of the action of the organic poisons is to be found in the union of two germs in the process of reproduction.

I have never been able to form a theory expressive of this analogy; but it is unnecessary to do so, since I find such a theory already constructed in the profound speculations of Darwin. Darwin has shown that there is a close agreement between sexual generation, germination, fissiparous generation, the repair of injuries, and ordinary growth. Allied to these processes is that of grafting, which bears a close analogy to the production of disease by inoculation. Darwin says: "When the tissues of two plants belonging to distinct species or varieties are intimately united, buds are afterwards occasionally produced which, like hybrids, combine the characters of the two united forms. It is certain," he adds, "that when

trees with variegated leaves are grafted or budded on a common stock, the latter sometimes produces buds bearing variegated leaves; but this may perhaps be looked at as a case of inoculated disease." I do not intend to discuss the theory of syphilis at any great length, and must therefore allow each of my readers to apply Darwin's hypothesis of pangenesis to the explanation of the phenomena of the disease. I accept that hypothesis as its distinguished author has advanced it—namely, provisionally—not because it is proved to be true, but because by its means we are enabled to connect a great many important and complicated facts. According to this theory, when the poison is brought into contact with the cells of another body, it impresses the motion it is itself undergoing upon the latter; these in their turn communicate the motion they have acquired to the neighbouring cells, and, at the same time, cast off gemmules which are absorbed into the blood. These gemmules have an affinity for the cells of other parts of the body, and when the two unite, the latter acquires the motion of the former. In this manner a certain tract of tissue within the body goes through a revolution; and when this revolution is completed, the tract of tissue affected by the poison has no longer an affinity for it, and is incapable of acquiring its motion. If, then, inoculated disease is to be regarded as a process in close analogy, not with the process of fermentation, but with grafting, budding, and sexual reproduction, the greatest importance must be attached, not to the poison in the blood, but to the diseased impulse given to the tissues external to the blood-vessels. In further consideration of syphilis two main questions have to be answered. First, what is the tract of tissue for which the syphilitic poison has an affinity? And second, what kind of motion is impressed upon that tissue by the poison? Both of these questions can only be answered in a very general and rough manner. The tissues affected by the syphilitic poison are the connective and fibrous tissues, serous membranes, and bones—in short, the tissues derived from the serous layer of the embryo, and which may be briefly termed the white tissues of the body. This general statement is too absolute, and must be qualified in two directions. The mucous membranes, and indeed all the tissues of the body, are liable

to undergo changes during the progress of syphilis. The connective tissue, however, enters so largely into the composition of all the organs of the body that it is doubtful whether the morbid changes in the other tissues, such as ulcers on the fauces do not originate in it. But not only are other tissues affected besides the white tissues, but the latter are not equally affected, nor are they affected simultaneously. It would, however, require much greater experience of the disease than I possess in order to be able to indicate the successive portions of the body which are roused to morbid action by the syphilitic poison. Having indicated in a very imperfect manner the tissues which assume the syphilitic motion, I shall now endeavour to reduce the motion itself to some degree of order. The action which leads to the primary sore is similar, to a certain extent, to ordinary inflammation, and in so far as the two agree, the motion which the former pursues in its progress will, in my opinion, be that which I sketched out for the latter. With regard, therefore, to the primary sore, all I have to notice are the points in which it differs from ordinary inflammation. The primary sore is very similar to an ordinary pustule in the first stages of its progress. There is at first a slight elevation of the skin, pus forms, then the pustule bursts, leaving an ulcer behind. If, however, the ulcer left after an ordinary pustule be protected from injurious influences, it soon heals; but the syphilitic ulcer becomes indurated at its base from the growth of fibrous tissue, and manifests very little tendency to spontaneous healing. But not only does the syphilitic ulcer not heal spontaneously, it is the starting-point of a series of changes throughout the body. The lymphatic glands nearest to the sore become affected. Even common inflammation may affect these glands, but in this case the irritation of the gland either subsides or ends in suppuration; whereas the syphilitic irritation ends in chronic induration of the gland. After this inflammation and induration, either with or without ulceration, occurs in various parts of the body, principally in the white tissues. Judging, however, from analogy, it is probable that certain parts of the body may assume the syphilitic motion without inflammation taking place. In the process of vaccination inflammation takes place only at the points which have been vaccinated; but there can be little

doubt that the entire tract of tissue which has an affinity for the variolous poison has been modified by the vaccine lymph. Similarly various parts of the body may be modified by the syphilitic movement without actual inflammation taking place. I have said that one of the distinguishing characteristics of the primary sore was that in the third stage it manifested no tendency to spontaneous cure; and I may now notice that a characteristic of the entire process is that, instead of running its course in a certain number of days, like small-pox, it may, and without interference generally does, linger on for years, and may be transmitted to posterity. These are the chief points I wish to notice with regard to syphilis; and having given a theory of the two main diseases in the treatment of which mercury is used, I must turn my attention to the action of the mercury.

I have already enumerated various effects which follow the administration of mercury both in healthy and diseased conditions, and it now remains for me to construct a theory by which these facts may be bound together. But before advancing my own theory, I shall briefly review a few of the explanations of the action of mercury which are current in our literature, and which influence the practice of the day. A great many think it a sufficient explanation of the action of mercury to say that it is antiphlogistic and antisyphilitic. These terms add nothing to our knowledge; they merely express, in abstract terms, that mercury does cure inflammation and syphilis: but the worst of it is, that under these abstractions lurk several erroneous notions, which have produced the most baneful influence upon practice. If mercury is an antiphlogistic, it was concluded that it might be administered when any part of the body was inflamed. Now that ample experience has proved this conclusion to be erroneous, it is generally laid down in books as a negative rule, that mercury is not useful when a mucous membrane is inflamed. This rule is, however, a contradiction of the theory. Another erroneous notion which underlies the term antiphlogistic is, that mercury checks inflammation; hence some medical men have been so logical as to administer mercury before the inflammatory process was begun, with the idea of preventing it. I have heard of an hospital surgeon who, after performing herniotomy, immediately gave four grains of calomel

to his patient. I imagine that most practitioners will condemn this practice, and yet, if mercury be antiphlogistic, the surgeon had sound logic on his side. Cold, for instance, is antiphlogistic, and it may be employed before inflammation is established in order to prevent it; and if mercury be antiphlogistic, why not employ it in the same way? Probably there is scarcely a theory in the whole history of medicine which has produced a more injurious influence upon practice than the one that mercury is an antisyphilitic; especially when it was combined with the theory that syphilis consists of a poison circulating in the blood, and that mercury counteracted this poison as an alkali does an acid. The inference from these theories was, that in syphilis the sooner the blood was saturated with mercury the better. Consequently it was given in all cases and in large doses, and, as might be anticipated, with the most disastrous results. The fact that any medical man should be satisfied with the theory that mercury is an antiphlogistic indicates that therapeutics is in a very backward state. Suppose, for a moment, that the question to be determined is, not what is the action of mercury on the body in health and disease, but what is the function of wind in navigation. Suppose one man maintains that its function is to cause vessels to sail, another that its function is to swamp vessels; one that it enables vessels to escape leeshores and rocks, another that it drives vessels upon them; each of these theories would be as conformable to right rules of philosophizing, and as true, as the theory that mercury is an antiphlogistic and antisyphilitic. No one would for an instant be satisfied with these theories if not for the intimate connection which exists between what Comte calls the theory of organic media and the art of medicine. Comte truly says: "If science springs from art, it can be matured only when it has left art behind." We ought never to forget that a theory of the action of a drug ought to explain its action when it causes a new or aggravates an existing disease, as much as when it cures a disease. Since I only wish to notice the theories which influence the minds of medical men in the present day, it is unnecessary for me to allude to the mechanical and chemical theories of the action of mercury. The theories I shall now notice are in advance of those just mentioned,

inasmuch as they make an attempt to connect a determinate alteration in the medium with modification of function and change of tissue. Billing thought that mercury produced its action by constricting the capillaries; but this theory will not explain a great many of the effects of the drug. It does not explain the fact that mercury causes inflammation in various parts of the body; that certain parts are acted upon in preference to others; that it aggravates certain cases of syphilis; that it does not cure inflammation of mucous membranes; and many more of the best ascertained effects of mercury upon the body.

The only other theory which I shall notice is the one which regards mercury as a blood medicine. There can be no doubt that, during the administration of mercury, the blood undergoes many changes; but the question to be determined is, whether this is a primary or a secondary action. The repair of a slight external injury produces alterations in the blood; but in this case the change in the blood is secondary to the change in the tissues: and it is quite possible that the same may be the case with the blood changes produced by mercury. According to the theory of inflammation and of syphilis which I adopt, the principal part of the morbid process takes place in the tissues internal to the blood-vessels, and it is only consistent that I should endeavour to elaborate a theory of the action of mercury in the same direction. On the other hand, those who are satisfied with the zymotic theory of syphilis will be naturally inclined to believe that mercury produces its primary action upon the blood. Nor can I prove a negative against this theory, and therefore cannot positively say that it is erroneous. I will, however, claim this much for the theory I am about to advance, that it will explain more of the known effects of mercury, and that the practical maxims by which we are guided in its administration at the bed-side can be readily deduced from it.

I have already said that I would take it for granted that the salt of mercury is absorbed into the blood, and I conceive that after absorption it has an affinity for a certain tract of tissue. The tissues for which mercury has an affinity are generally the same as those attacked by syphilis, namely, the white tissues of the body. It seems to affect by preference the joint ends of the

long bones, serous membranes, certain parts of the true skin, and probably the submucous tissue of the tonsils, fauces, and gums; and it appears to seek an outlet from the body mainly through the salivary glands and the mucous membrane of the alimentary canal, especially that of the rectum. The nature of the influence exerted by mercury over the tissues for which it has an affinity is that of a stimulant; but in order to prevent misconceptions I must dwell a little on the meaning which I attach to that term. Pereira defines a stimulant "as an agent which increases the vital activity of an organ." When, however, I say that mercury is a stimulant to the tissues for which it has an affinity, I do not mean to assert that the real effect which ensues is one of vital activity. The reverse of this is very often the case; but even when death of the tissue results the tendency of the drug may be that of a stimulant. For the sake of illustration, let me imagine a person looking at a boy's kite falling to the ground, and suppose him ignorant of the special characteristics of this instrument, but knowing the general properties of matter. He will know that the kite is falling by the force of gravity, and may think that by pulling at the string attached he will accelerate its fall. If he makes a very slight pull, he will succeed; a little stronger pull, and he may still succeed: and this he may regard as a complete verification of his argumentation. But when the pull is still stronger, the kite makes a turn and begins to ascend. By gradually increasing the tension of the string he may get the kite to ascend more steadily and more rapidly, and he may now be ready to come to the conclusion that the more he pulls the more quickly will the kite ascend, when all at once the balance is overthrown and the kite descends again. Here then are the most opposite effects produced by only slight differences in degree of the same cause, namely, slight variations in the tension of the string attached to the kite. The explanation of this is that when we call the tension of the string the cause of the motion of the kite we employ the term in its popular and not in its scientific sense. In the scientific sense the cause is the aggregate of conditions or circumstances requisite to the effect. The scientific cause of the motion of the kite is not only the tension of the string, but the properties of the kite itself, with those of the earth and of the atmosphere which

surrounds the kite. In investigating, therefore, the cause of the effects attributed to mercury we ought to remember that the scientific cause is not the mercury only, but also the laws of the body with that of its environment. Hence it is that the most opposite effects may be explained by one and the same tendency of action of one of the factors of the cause. It now remains for me to show that the main effects of mercury on the body may be explained on the supposition that it tends to stimulate to increased activity the tissues which I have already specified. I shall now endeavour to apply this theory very briefly to the explanation of the phenomena. When mercury is administered in health it may, by stimulating in excess, produce local inflammations in the tissues for which it has an affinity. I cannot say why mercury acts upon the salivary glands, gums, fauces, and upon some parts of the alimentary canal; our best plan is to accept the facts and endeavour to utilize them in practice. These facts may at some future time be explained when the laws of the correlation of growth, or what Paget calls "complementary nutrition," are better ascertained. According, then, to my theory, the changes in the blood and the nervous symptoms result from anterior nutritive changes in the white tissues.

When mercury is administered in disease, say in the first stage of inflammation of a tissue for which it has an affinity, it may act in two ways: it may aggravate the disease, or it may develop the second stage; hence the caution which is generally laid down in books, that mercury should only be employed after depletion. Mercury, in short, is a hazardous remedy for the first stage of the disease, and should in general not be employed till the skin is moist and the pulse has lost its hardness. In the second step of inflammation of a tissue, for which mercury has an affinity, it stimulates it to increased action; more blood is attracted to the part; the circulation through it is rendered more active; absorption of effused fluids takes place, and the cells of the part rise in the order of organization: hence the entire course of events in this stage is towards health. Mercury is not a remedy for the generality of mucous membranes, just because it has no special affinity for them.

In syphilis, mercury is administered when the base of the primary ulcer is thickened. It acts by stimulating the tissues surrounding the ulcer to increased action. Great care, however,

should be taken not to push the action of the drug too far during the period of the disease. It ought to be remembered that the syphilitic gemmules may already be circulating in the blood, and if these gemmules and the mercury impress their motion upon any tissue at the same time, the disease may be very much aggravated. I have already said that some of the tissues of the body may be undergoing the syphilitic movement without any external lesion being produced. But if the mercury begins to affect this tissue at that time, a severe lesion may be the result. This will explain why some medical men have attributed the syphilitic lesions to the mercury itself, since the drug has in this case acted as a concurring cause. The mercury should be administered, not before a lesion takes place, but during chronic thickenings and other lesions, in order to stimulate the tissues to increased activity, and only when the lesion takes place in a tissue for which the mercury has an affinity. The action of mercury therefore in syphilis is not at all comparable to the action of an alkali in neutralizing an acid, or to that of an antidote to a poison, but is more analogous to the action of a spur in riding a horse. Sometimes the spur may be useful, sometimes injurious; but the object is to get the horse to accomplish a journey. Similarly, mercury may be useful at times, may do a great deal of harm at other times; but, in determining under what circumstances it should be employed, it ought to be remembered that the aim of treatment is not to check or repress the disease, but to assist it through a revolution. To borrow an illustration from the life of states: the function of the medical man in the treatment of syphilis is not like that of the stern warrior, who suppresses a revolution by opposing force to force and compels order, but to that of the great and wise statesman, who directs the social forces into a particular channel, and out of the discordant elements evokes the double events of order and progress.

Dr. Ringer, in his recent work on therapeutics, recommends mercury in mumps, tonsilitis, and dysentery; and this is only what might be anticipated if my theory is the correct one. In the present divided state of opinion I shall not undertake to decide whether or not it has a special action over the liver, but I will say that Dr. Bennett's experiments are not at all conclusive in the negative.

ON THE USES OF WINES IN HEALTH AND DISEASE.

BY THE EDITOR AND STAFF.

PART II. ON WINES IN DISEASE.

Section II. Wines in Chronic Diseases.

(Continued from p. 168.)

THE final section of our subject concerns the employment of wines in chronic diseases—a theme so extensive that it is difficult to select the points which may be most advantageously brought together within the compass of a paper of moderate length. The best division of the subject that suggests itself to our mind is the following:—1. Wine in debility, produced by failure of primary digestion. 2. Wine in defective conditions of the blood, such as anæmia, chlorosis, hydræmia, &c., not yet complicated with tissue-change. 3. Wine in phthisis, and in the wasting diseases of childhood. 4. Wine in chronic neuroses of the aged. 5. Wine in exhausting mucous discharges. 6. Wine in chronic suppuration.

1. In a large number of persons debility is mainly caused by a failure of primary digestion: the first starting-point may have been either of several occurrences, but the main fact is that the patient does not digest, even if he still swallows, a sufficient quantity of nutriment; very commonly, too, the evil reacts upon itself, and persistent under-nutrition brings about a notable impairment of appetite, or even a positive disgust for all food.

It must be understood that cases of the class we refer to are not always distinguished, in the first instance, by loss of appetite; indeed there are some patients who from first to last take a fair quantity of food, though they fail to make use of it in the organism. And on the other hand there are plenty of cases

of failure of primary digestion, where anorexia is from the first a conspicuous symptom, but in which the administration of alcohol in any shape would be a grave mistake. Among these we may, perhaps, include the majority of chronic catarrhal affections, but of course most especially that variety of gastric catarrh which has itself been provoked by alcoholic excess: here no treatment will be anything but mischievous which does not include a complete abstinence from alcohol. On the other hand, the absence of well-marked catarrhal physical signs (*e.g.* in the appearance of the tongue) by no means certainly contradicts the notion of alcohol as perhaps the cause of dyspepsia: we occasionally see a drunkard with a perfectly clean tongue.

Chronic gastric catarrh, arising as an apparently independent affection, and not linked (as it often is) to chronic diseases of some other viscus, is probably always caused by improper food or drink, or else by the same kind of exposure to weather, &c., which might produce an ordinary chronic nasal or bronchial catarrh. It is consequently but very rarely a fit subject for alcoholic treatment: but if ever such treatment be found absolutely necessary from the general state of health, a very light effervescing wine, free from sugar, or extremely weak brandy and soda-water, is the only form which should be allowed. A single glass of strong wine or spirit may undo the work of months of treatment.

There are, however, a considerable number of cases of dyspepsia, to which there is a tendency, at present, to give the title of catarrhal, simply on the ground that the dyspepsia and want of appetite are accompanied by a certain amount of apparent enlargement of the tongue, and exhaustion of its epithelium, with perhaps a few red points near the tip; but in which the original cause of the mischief is, in truth, nothing but nervous depression. For such cases as these a fixed moderate allowance of a generous wine is very helpful. When we can distinctly make out from the history that the patient has not exposed himself to the effects of improper food or drink (very often such people have been too abstemious in every way), or other ordinary causes of stomach catarrh, we may very properly employ a wine of good body and medium alcoholic strength. For an adult man, six to eight ounces per diem of a Beaune

(Burgundy) of about 14 per cent. absolute alcohol, or four ounces for an adult female, will be very useful; and for the same purpose we may recommend several of the stronger red Hungarian wines, and the Greek wine, known as red Kefesia. The chief requisites in wine, for this purpose, seem to be, (*a*) medium alcoholic strength, and (*b*) good original vinous flavour; and it does not appear requisite that the qualities of very *old* wine should be present. A moderate amount of *astringency* perhaps may increase somewhat the good effects of such wines upon the appetite; but anything like a highly tannic wine will rather disgust, and may also cause troublesome constipation.

While maintaining, however, that many such dyspeptic patients, with pseudo-irritant symptoms, are really benefited by wine, we must insist that the quantity be strictly restrained to the limits above mentioned, and also that it is very necessary to inquire whether the original depression did not arise mainly from neglect of ordinary food. Dr. Blandford has recently pointed out[1] the great mischief that is often done to the nervous system by the bad custom of many hard-working merchants to pass a long day from breakfast to late dinner without food; and we may lay it down as very certain that the dyspepsia, which is a prominent feature in such cases, should be encountered, in the first place, rather by increased quantities of suitable food than by alcohol.

2. The use of wines in conditions of blood which, whether in the form of simple anæmia, chlorosis, or general hydræmia, indicate above all things a deficiency of the all-important red corpuscles, is by no means a simple matter. Practically we may clear the ground somewhat by laying down, as a fact, demonstrable from large and general empiric experience, that anæmia resulting from hæmorrhage nearly always does require and is immediately benefited by the use of alcohol; and that this is much best given in the form of full-flavoured and potent wine. For such purposes, full-bodied port-wine of moderate age, but retaining much of the richness of its original flavour, is decidedly the best agent: and we may venture to administer it with considerable freedom (*e.g.* 12 to 16 oz., or 6 to 8 small port glasses,

[1] "On the Value of a large Supply of Food in certain Nervous Diseases;" *Practitioner*, July 1870.

for an adult), on the condition that we never produce symptoms of narcosis. It will be found that these quantities are often well borne at first, but they must be rapidly and steadily reduced as the patient's condition improves, and as he becomes more sensitive to the action of alcohol.

It is much more difficult to say whether, or how much, alcohol ought to be given in cases of anæmia which verge towards the chlorotic type. As a general rule, we strongly object to its use in this form of blood-weakness, for we have found it complicate matters by increasing the headache and distaste for food, without really advancing the blood-regeneration in the slightest degree; moreover wine has a tendency to make this class of patients more hysterical and self-indulgent than they otherwise would be. Exception, however, must be made for the case of rapidly advancing chlorosis of a dangerous type, with profound melancholy: here the use of stimulants, and especially of generous port-wine, is often our most valuable resource; although it can only divert the course of the disease, and give breathing time to allow of the effectual use of tonics, food, and hygiene.

Again, there is a class of anæmic cases in which the true source of mischief is nothing more than *neglect of bed*, coupled or not with anxiety and worry of mind. If this neglect of rest be inevitable, from the press of necessary work, then, imperfect as the remedy may be, we believe that alcohol must be allowed, and that pretty freely. It must never be forgotten that rest, and not alcohol, is the true remedy. Nevertheless we are quite certain that it is an error to suppose that alcohol does nothing more than enable such persons to use up their brain tissue faster, and thus get more work out of themselves for the moment: we cannot doubt that it affords substantial assistance, whether by the production of brain-force, or possibly by aiding the nutrition of nervous tissue. Only it must always be remembered that the repair of all tissues is far more effectually provided for by periods of rest from strenuous exertion, allowing time for the more slowly convertible elements of food to have their full effect.

As regards the condition of hydræmia,—general poorness of blood in all solid ingredients,—which is so strikingly seen in

sundry chronic visceral diseases, we believe that no absolute rule as to the use of alcohol can be laid down, some such patients appearing to bear stimulation very badly. In the great majority of such cases, however, it is quite necessary, and the main point is to employ it in that form which will exert the maximum good influence upon appetite and digestion. For this purpose we have always found the greatest effectiveness in port or sherry or marsala; and it is desirable to choose a wine not so old as to have lost its original flavour, but sherry of moderate age contains this last qualification with a fair development of the volatile ethereal ingredients; and these are a very useful element, more especially where the patient is restless and sleepless.

3. The question of alcohol in phthisis of adults is hotly disputed: on the one hand, many authorities maintain that it is an unmixed evil; on the other hand, the treatment possesses numerous advocates, and we even meet with records (by Flint and others) of patients almost exclusively nourished upon an alcoholic diet for prolonged periods, with apparently very beneficial effect. This subject has engaged our particular attention, and without expressing a very confident opinion, we have good grounds for believing that the following is a near approach to the truth. There are two classes of cases in which alcohol appears to play an important part in the arrest of phthisis. In a class of patients who have delicate skins and perspire very freely, and with whom, at the same time, oil and fatty matters habitually disagree (a not very common combination of conditions, but one which is seen in a certain number of instances), we have more than once seen remarkable effects produced by the entire abandonment of all medication, and the employment of large doses of spirit—whisky or rum; and a singular point in these cases was the *tolerance* of alcohol that was shown, even from the first. It is a singular sight to observe a delicate and habitually abstemious person taking ten or twelve ounces of rum a day as coolly as if it were the most customary thing; yet that was the allowance consumed by a patient of my own, and with the exception of a fair amount of milk it was almost his sole nutrition during many months, in the course of which the most threatening symptoms of the disease, especially the signs of commencing softening, had entirely disappeared.

Even where the patient, however, is not affected in the peculiar way above indicated, and where he is able to take a fair amount of fatty and other nutrient matters, there is an important use for alcohol in certain contingencies, though we believe that it should be excluded from the routine of his daily life. We refer to the occurrence of hectic and other symptoms of acute softening: and we hold that there is a great want of discrimination in the way in which wine-treatment is often recommended, or forbidden, by authorities, in these cases. Our own experience has led us to believe that the question must here be judged, just as we have proposed that it should be judged in cases of acute disease, *experimentally.* In each case the effects of experimental doses upon the form of the pulse-wave, and on the temperature, and the elimination of alcohol by the kidneys, should be carefully tested; and according to what we have noted, in observing a large number of cases, we are justified in believing that when alcohol reduces temperature, and the dicrotions of the pulse, and fails to pass away in notable quantity by the kidney, it *always does good;* but that the slightest degree of narcotic action of alcohol is decidedly harmful. We do not doubt that it is to the results of such narcotic action that some physicians refer, when they say, as a very able physician said to us the other day, that "alcohol was murder in phthisis." As regards the form of alcohol to be employed, we believe that the main thing to be considered is the patient's fancy, as this will very generally indicate the proper forms of stimulant. Only, we ought to be careful to know the alcoholic strength of the liquor, whatever it be, and we ought to be sure that the wine is free from acetous decomposition.

Among the wasting diseases of childhood there are a variety of conditions in which the judicious use of alcohol is invaluable; and here the stronger wines are invariably to be preferred, especially sherry. We have already referred to the use of small quantities of sherry in the case of children who, without manifesting any signs of positive disease, show a marked tendency from time to time to run down suddenly in flesh. But wine has a much more positive value in infantile wasting which is the expression of a serious constitutional vice. Among the conditions of this kind we may especially notice the

scrofulous and the rickety forms of disease, and, beyond all, well-pronounced tabes mesenterica. It is rather remarkable that the evident superiority of steel wine to other ferruginous preparations, in the majority of these cases, has not led to a more general consideration of the probability that the vinous part of the medicine goes for much in its effect upon the organism. Our own attention was principally called to the use of wine in infantile marasmus by the pre-eminent efficacy of the vinum ferri; and since that time we have very often made the experiment of relying on wine without the iron. The results have been excellent; and in studying the matter as closely as we could, we have been led to the conviction that it is principally by fortifying the functions of primary digestion that the remedy produces its good effects. It is now our invariable custom to commence the treatment of all cases of tabes by prescribing a fixed allowance of sherry (given as medicine preferably, with the addition of a vegetable bitter) at the rate of from one to two ounces per diem. Nor does it make any difference whether the case be complicated with diarrhœa or not, only in the latter instance there is nearly always additional reason for strengthening the function of primary digestion, and wine is especially useful; though it is needless to say that careful avoidance of food that is difficult of digestion is an essential condition of success. In rickets, again, a diet composed entirely of cream, milk, and bread, with the addition of some phosphate of lime, and the allowance of sherry just mentioned, affords, probably, all the assistance that nature can receive from art in rectifying the faulty nutrition of the body, except in the way of general hygienic regulations. But it is especially in warding off true tuberculosis from children that the value of wine is conspicuous; and were this more generally recognized, we believe that phthisis of children, instead of being so fatal a disease as it is, would rarely develop in a fatal form at all; of course supposing that all proper hygienic precautions were adopted, and especially a liberal supply of simple and nutritious food. But we repeat here what we said in another place: wine should always be given to young children in the form of medicine, and not as a beverage at meals: since it is important not to set up a liking

for it which, when the child arrives at the critical period of puberty, might have an unfortunate influence on the further development of the emotional and sensual part of his nature.

4. Certain chronic neuroses of the latter part of life present special aspects in which wine becomes an important consideration. We refer especially to that exceedingly severe and intractable form of neuralgia (most commonly facial) which is rarely or never developed until after the age of forty ; and which, once developed, resists remedies with such pertinacity. We are not quite so helpless against this terrible malady, it is true, as we formerly were ; in particular it may be said that galvanism now appears to offer great chances of substantial relief. Still the misery which these neuralgias inflict, and the extent to which they shatter the system, is deplorable under the best of circumstances; and we need every helpful adjunct we can get. The reflex irritation which the disease sets up is often fatal at once to appetite and to sleep; and wine is the true remedy for this part of the mischief. In elderly persons we have not to apprehend the same mischief to character which is so great a danger when alcohol is prescribed with freedom for the chronic ailments of those who have not yet passed the "grand climacteric;" and we have personally seen cases in which, when the stomach would retain scarcely anything else, it was quieted, and the patient's strength was admirably husbanded and fortified, by an almost exclusively alcoholic diet—twelve to eighteen ounces of sherry per diem continued for several days. The older the wine, the more endowed with ethereal ingredients, the more effective is it for this purpose. Still we have seen patients greatly benefited by large doses of spirit which was practically little more than alcohol.

5. The employment of alcoholic drinks in cases of chronic mucous discharges—*e. g.* chronic catarrh of bronchial or nasal mucous membrane, chronic leucorrhœa, &c., is a very doubtful matter. That they frequently relieve the sensations of depression and discomfort which these affections cause is unquestionable, and in the case of the chronic bronchial catarrh of the aged it may be that they are indispensable. As regards the commonest of all chronic mucous discharges—leucorrhœa—we have long been learning, with increasing strength, to believe that

the treatment is almost unmixedly mischievous; at any rate that alcohol ought never to be prescribed, whatever the apparent degree of depression, save in very small quantities of wine, preferably claret, Hungarian Carlowitz, or some of the rough red Greek wines, taken with meals to assist appetite and stimulate primary digestion. The true remedies are local astringents and the free application of cold water, combined with the most persevering use of exercise in the open air. And alcohol offers the most serious temptations to women suffering from the deadly languor often associated with profuse leucorrhœa; temptations which they would do well never to face.

There is a particular use of alcohol, however, in one form of chronic catarrh, viz. the chronic pseudo-dysentery of young children, which is really of high value. Directly astringent *medicines* are of almost no use in these complaints; and the only drugs that should be employed are ipecacuanha, with or without very small quantities of opium. But a slightly astringent red *wine* of fair alcoholic strength often is very useful. And here we have much pleasure in saying that some of the Greek wines, of which we have been rather sparing of praise in other relations, fill an important place. They have the requisite body, they have a useful degree of astringency, and they have an alcoholic strength conveniently intermediate between the lighter natural wines and the strongly fortified ports, sherries, and marsalas. Three tablespoonfuls a day, for a child of three years old, is a fair allowance.

We hasten to conclude this imperfect sketch of the use of wines in chronic diseases by a few words on what is perhaps the most important part of the subject, viz. wine in the treatment of chronic suppuration. There are at least two objects which alcohol can achieve in this state, and they are of so great consequence that the judicious use of this remedy is frequently decisive in averting serious and even fatal results. In the first place, there is every reason to think that the free (but non-narcotic) employment of alcohol checks both the migration of white corpuscles and all the subsequent movements which go to the formation of pus: and if it be true, as some suppose, that pus cells are also formed from the division of the elementary tissues, there can be little doubt that this process also would be checked by the treat-

ment. On the other hand, alcohol, especially when given in the form of stout or port-wine, marvellously sustains and fortifies the appetite and the primary digestion. The prompt limitation of chronic suppurative processes is by no means to be thought of—with our present knowledge—as a mere beneficial check upon the morbid action which is directly exhausting the bodily forces. It is all-important, because we have to dread absorptive infections, and the appearance of the true and almost necessarily fatal tuberculosis. How powerfully this argument ought to weigh with us is sufficiently apparent if we consider the case of chronic empyema, and the miserable frequency with which it is followed by fatal phthisis. The prompt evacuation of the pus, even in cases of large chronic abscess, if it were supplemented by proper local measures for cleansing the cavity, and excluding fermentative processes, would far more frequently be followed by cure than is now the case, if it were associated with the intelligent use of alcohol. The copious, and even reckless, administration of stimulants is perhaps common enough; but this is often mere waste. The patients will bear and require more alcohol than in health: but there is no need for any great excess. The simultaneous use of alcohol and of quinine, according to the principles laid down by Binz, offers the true solution of the matter. From three to six wine-glasses per diem of port, each glass containing one grain of quinine, is, we believe, incomparably the best form of administration to employ in all these cases. But even here we must insist that it is absolutely necessary to judge by results, and to scrupulously reduce the allowance of wine the moment that even the slightest symptoms of narcosis present themselves.

Reviews.

Observations on Therapeutics and Disease. By Donald Campbell Black, M.D., L.R.C.S. Edin. London: Churchill, 1870. Pamphlet.

The perusal of this clever pamphlet has given us a curious series of sensations. The first, we freely confess, was one of indignant surprise; the second was a strongish reaction of feeling in the author's favour; the third and final impression was, that although over-ambitious, and by no means proving his whole case, Dr. Black is one of those thinkers who ought to be encouraged.

Our first surprise was natural enough; for it is not often in the present day that one meets with so thorough-going and exclusive a pathologist. His four propositions are these:—1. The harmonious performance of histogenesis and histolysis constitutes health; 2. That a class of diseases devitalizes by a preponderance of the histolytic function of assimilation; 3. That to an insufficient oxidation of effete tissue (or the converse of the second proposition), or inadequate elimination, a class of diseases *sui generis* may be ascribed; 4. That apart from these, many diseases are due to irritation specifically or non-specifically produced. The first of these propositions there is no need to discuss. Under the second, Dr. Black includes the whole class of fevers; under the third, he includes gout, rheumatism, oxaluria, neuralgia, calculous diseases, scrofula, diabetes, and probably scarlatina, diphtheria, cancrum oris, hospital gangrene, &c., erysipelas, puerperal fever, and all their local manifestations; the first group of this division induced by habit of body, the second, or problematical, by the introduction of a morbific agent into the blood; under the fourth section are the diseases chiefly characterized by inflammation and its consequences.

We have said that we think such an attempt as Dr. Black's is one to be encouraged. We think so, because boldness of thought, and a disposition to handle the problems of disease and of health in a large spirit, are very necessary to that great reform in therapeutics which we all hope to see, but which is still very much a mere hope. We cannot, however, for a moment pretend to accept Dr. Black's main classification as sufficient, still less to follow him in the details of therapeutic

indication which his leading principles suggest to him. There is, for instance, no reason whatever, so far as we know, for placing scarlatina, erysipelas, and puerperal fever in the exactly opposite category of diseases to that of the true fevers which are accompanied by hyper-oxidation and rapid wasting of tissue; on the contrary, all that is known from chemical analysis of excretions, &c., is strongly in favour of the belief that the former diseases, also, are attended by hyper-oxidation of tissues. Again, we must object strongly to the classification of neuralgia, rheumatism, and gout together, as diseases caused by deficient oxidation; for if gout deserves this character, there is no proof at all that rheumatism does; and the close connection which the author assumes between these two diseases and neuralgia is less and less admitted by modern writers. The tendency to neuralgia appears almost constantly to present itself in connection with hereditary tendencies to neurotic disease, and though no one would deny that the presence of lurking gouty or rheumatic tendencies may occasionally favour its outbreak, it seems to occur, in much the greatest number of cases, quite independently of such a cause, and indeed to be provokable by a number of different influences, which agree in nothing except in the fact that they depress the nervous system. And certainly we believe that very few authorities will be found to agree with Dr. Fuller, whom the author quotes, in thinking that the pain of neuralgia is generally due to affection of the nerve-sheath, rather than the nerve-substance; such a class of cases there undoubtedly is, but they are small in number, and the vast majority of neuralgias, at their commencement, appear to involve no affection of the fibrous structures whatever. Assuredly, also, it is *not* true that neuralgias at all generally, far less universally, are subjects of so-called "oxaluria."

Diabetes, again, which the author quotes as a disease of deficient oxidation, seems to us to lack altogether the proofs of such an origin; rather, if we trace it into its first beginnings, it would seem to depend upon obscure changes in the central nervous system, and even when the disease has developed the glycosuric stage there is no proof at all of deficient oxidation of the tissues generally. In like manner, Dr. Black is far too hasty in his statements about the chemistry of tubercle and of the phthisical state generally. He says of tubercle, that carbon predominates in its composition; but a very little recollection would tell him that there is no more carbon in tubercle than there is in albumen, but rather less carbon, if the analyses of Scherer were correct. And as regards the amount of urea in the urine, he is content with quoting the authority of E. Becquerel, to the effect that there is a great diminution of this element; but, on the other hand, the evidence of Parkes and of Brattler show that

with a moderately advancing phthisis the diminution is small or nothing, while in hectic attacks, and in the last stages of phthisis, it would appear certain (Ringer) that there is a large increase of urea. And we must say that the therapeutic conclusion to which Dr. Black's theory of phthisis leads him is to our thinking quite untenable, for he thinks that the beneficial action of cod-liver oil must be due to the *oxidising* power of fats. It is to us a perfectly new conception that fats are oxidisers; we should have said that, on the contrary, they were consumers of oxygen, and would so far tend to shield the tissues from those oxidation processes which Dr. Black thinks so specially needed, in phthisis and allied diseases, to remove effete matter from the body.

These criticisms are only a few out of a great number which we could make; and we have felt it our duty to make them in order to show that the author has failed to lay what we can consider at all a satisfactory foundation for a reformed system of therapeutics. In spite of this, however, we conclude with an expression of goodwill to him; for there is much ability in his pamphlet, and it will be an immense gain to practical medicine if he succeeds in stirring up our scientific therapeutists to look at questions of medication in a broad way, and in relation to the great physiological states, instead of merely ticketing remedies with specific titles, and inducing the hapless practitioner to discharge them at a supposed peccant organ, as a boy might aim a pea from a pop-gun. Only, if a science of therapeutics is to be founded on this new and more rational kind of basis, it will be necessary to be extremely careful that the physiological facts which are to be built upon are absolutely accurate.

Acupressure. An Essay to which a Prize was awarded by the Medical Society of the State of New York. By JOSEPH C. HUTCHINSON, M.D., &c. &c. Albany, 1869. Pamphlet.

THIS essay is a brief but clear and forcible account of a record, both experimental and practical, on the merits of acupressure; and its author comes to conclusions, based on a large amount of experience, which are highly favourable to the claims of acupressure as compared with ligature of arteries. It seems to us an important reinforcement of the arguments hitherto advanced in favour of the process, and is certainly deserving the attentive study of English surgeons. "So strong," says the author, "has become my conviction, that, for the past twelve months, I have not taken ligatures into the operating room, and for two months, during a recent service in the Brooklyn City Hospital, which accommodates from 150 to 200 patients, there was not a ligature in the institution." Such facts as these are worth much more

than speculative arguments, and must command the respectful attention of practical men.

A Resumé of the History of Hygiene. Being the Introductory Lecture to a Course on Hygiene and Public Health. By W. H. Corfield, M.B. (Oxon.), M.R.C.P. (Lond.), Professor of Hygiene in University College, London. London: H. K. Lewis, 1870.

This introductory lecture, which is supplemented by a syllabus of Professor Corfield's course of lectures, cannot but be regarded with interest by all well-wishers to the progress of hygienic knowledge among our future medical practitioners. A heavy responsibility is laid on those who, like the author of this address, are entrusted with the creation of a system of teaching on this most important subject at one of our principal metropolitan schools, and the whole profession is interested in observing the manner in which they lay themselves out to their work, so to speak. There is certainly no lack of intelligence or energy in the way our author attacks his subject. He is full of faith in the powers of hygiene to ameliorate the condition of mankind; and, with a proper ambition to see the science placed upon a solid foundation, he carefully inculcates the necessity of a comprehensive study of everything that can throw light on the etiology and prevention of disease, and, besides this, of a mental culture which will fit the student to draw proper conclusions from observed facts arrayed in the statistical form. If there be a fault in the tone of his inaugural address, it is perhaps a certain over-sanguine disposition, which appears to tempt the author occasionally to a scarcely justified assumption which fits well with a preconceived idea as to the efficacy of certain hygienic measures. Is he quite justified, for instance, in saying not only that the Egyptian plague is a disease of modern times, but also that it is "generated" from the pestilent marshes which the negligent tillage of the degraded modern Egyptians fails to redeem to the purposes of agriculture? We trow not; and we think that the enthusiastic professor would do well to reconsider this, and one or two other similar statements in his address, under the chastening influence of that mathematical turn of thought which he very properly describes as one of the most important qualifications of the hygienic investigator.

Bellevue and Charity Hospital Reports; 1870. New York: Appletons.

This volume of reports of the New York Hospitals contains fourteen papers, scarcely one of which is without interest, and the majority are of great value. Several which we cannot notice

here, because their bearing on therapeutics is too remote, may be mentioned, in order to direct our readers' attention to articles which they ought not to overlook: namely, Dr. Austin Flint's three papers "On the Analytical Study of the Pulmonary Physical Signs furnished by Auscultation and Percussion," "On the Diagnostic Characters, Mechanism, and Significance of the Mitral Direct, or Obstructive Cardiac Murmurs, and on the Occurrence of a Tricuspid Direct Murmur," "On the Mode of obtaining the Venous Hum, and the value of this Physical Sign;" and the report on the Pathological Department of Bellevue Hospital by Drs. Southack and Janeway. A paper by Dr. Flint on an analysis of 102 cases of Bright's diseases is the first to attract our attention, among those which bear directly on treatment; but before proceeding to notice the author's remarks on the latter point, let us mention one or two of his previous conclusions which are of consequence.

As regards etiology, the following are the conclusions suggested by the facts Dr. Flint has collected:—*Occupation* seems to have no particular influence in inducing Bright's diseases; *Alcoholic beverages*, as to which precise notes were obtained in 38 cases (patients mostly males), also appear to have no special causative influence; the *Male Sex* appears to be considerably more liable to these diseases than the female; as to *Age*, excluding scarlatinal cases, the mean age of 50 fatal cases was 36 years, of 18 cases that recovered it was 32 years, of 24 whose termination was not known it was 34 years; in short, the causes of Bright's diseases are chiefly operative after adolescence and before advanced age.

As regards treatment, this was never directed towards direct cure; but (exclusive of mere palliatives) had reference to the following objects: (1) Elimination of excrementitious principles, when coma or convulsions were present; (2) removal of dropsy; (3) diminution of albumen in urine; (4) improvement of appetite, digestion, and general condition.

As regards diuretics, the author comes to the conclusion that these remedies do not do mischief, as has been often argued, in desquamative suppuritis, and that in several instances they have appeared to effect decided good; he employed the acetate, nitrate, and bitartrate of potash, digitalis, squill, &c.; and he believes that even more efficacious remedies of the kind might be employed. He has seen very good results from infusion of parsley-root. Of cathartics, the author speaks decidedly; both as regards uræmia and dropsy he has no question of the great benefit which they frequently produce. In the main we agree with him here; and we especially think him right in deprecating the exaggerated fear with which many practitioners regard elaterium in casesof great dropsy and distressing dyspnœa; the good

effects of this, in apparently desperate circumstances, must be witnessed in a series of cases before the physician can properly trust the remedy. We cannot, however, agree with Dr. Flint's approval of castor-oil, which, though universally ranked in the same category with elaterium, is in fact a very different drug, and may excite such violent irritation in all the internal organs as greatly to increase the patient's danger, while elaterium, in anything like moderate quantity, is prostrating merely by reason of the enormous outpour of intestinal fluid which it excites—an inconvenience which brandy will sufficiently meet. On the subject of the hot-air bath, the evidence adduced by Dr. Flint is disappointingly negative, and although the author himself does not go quite so far, we should be inclined to say there is no proof that it ever effected any good. Among tonics, the author seems to have tried gallic acid with especial care and perseverance, and with decidedly negative results; on the other hand, there appeared to be no doubt at all that iron, or iron and quinine, effected positive good in a number of cases, after the gallic acid had failed. For our own part, we long to see the experiment carried out, on the large scale, of submitting all patients who present albuminuria from renal disease (whether acute or chronic) at once to treatment with full doses of muriate of iron: using no adjuvant whatever, save the employment of purgatives when great dropsy or serious uræmic symptoms occur; and of course dealing as may be necessary with complicating affections of other viscera. With these measures, with suitable diet, and with chloral as a hypnotic when needed, we shrewdly suspect that the physician can effect all that it is possible to effect.

Another most interesting paper is by Dr. Hammond, "On certain Results of Excessive Intellectual Exertion." We cannot consent to spoil this short treatise by a hurried analysis, but we strongly recommend it to the attention of English physicians. In regard to treatment, however, it is noteworthy that Dr. Hammond insists, with great confidence (and his authority deserves all respect), that besides entire rest and change of scene for a time, and a complete change of the mental habits afterwards, medicinal treatment is not only usually requisite, but does a large amount of positive good. The author thinks that bromide of potassium decidedly checks that hurry of the cerebral circulation which is especially common as a result of intense and especially of *irregular and intense* cerebral exertion; and, on the other hand, phosphurated oil or the phosphate of zinc, with strychnia, have a powerful influence in averting the mal-nutrition which is an otherwise too probable second stage of the complaint. Cod-liver oil is of value as an adjuvant. Besides these, Dr. Hammond speaks warmly of the effect of the constant galvanic current, both for the purpose of contracting the calibre of the cerebral vessels in

the early stage, and to improve the nutrition of the brain. For the former purpose the positive pole should be applied to the sympathetic in the neck, the negative to the nucha: or one pole may be placed over each mastoid process. To improve nutrition, one pole should be placed on the nape of the neck and the other on the forehead. Not more than sixteen elements should be employed, says Dr. Hammond, and even with that number great care must be taken to stop as soon as signs of fatigue are shown. If Dr. Hammond is speaking of Daniell's elements, we should say that something like half the number would be safer, and that it would not be well to employ the current for more than three minutes at a time, with breaks at each ten seconds.

Of surgical papers the volume contains several that are of much interest. We can only refer the reader to Dr. Lewis A. Sayre's remarks on "the Serious Consequences which result from Neglect of Slight Injuries of the Ankle-joint;" Dr. Isaac E. Taylor's elaborate paper on "Amputation of the Cervix Uteri;" Dr. Burrall's paper on "Entire Excision of the Os Calcis;" and especially to Dr. Gaillard Thomas's account of eight cases of ovariotomy, of which four were successful. A word or two must be given finally to an interesting report of the result of amputations at the Bellevue. It is doubtless no fault of the compiler of this report, that he has (as he confesses) been able only to find records of something like one-sixth or one-eighth of the number of amputations really performed during the period which his tables cover. It is well, however, that the reader should clearly note this fact: otherwise the figures are alarming enough, showing a mortality, on all amputations, of fifty per cent.!

An die ordinirenden Aerzte der Militarlazarethe. Von C. Binz.

We have received this interesting memorandum from Professor Binz, who, like a good patriot, has gone to the field with the German army, and is, or was the other day, attending to the wounded at Gorze, near Metz. It is a series of directions issued to the surgeons of the military hospital, in order to enable them to test to the full that power of quinine to prevent the rise and limit the progress of septicæmia which seems to be established as a fact by those researches of Binz which we have already several times mentioned in this journal. We reprint them, as they are of almost equal interest to surgeons of large hospitals in this country.

1. The combating of traumatic septicæmia by quinine must begin at the moment when nausea is first felt. The early detection of the indications is also aided by thermometric observation twice daily, and a sharp observation of the aspect

of the wound. It will be proper in doubtful cases to begin quinine as a precaution: no harm can be thus done.

2. The administration of quinine must be continued some days after we have quite destroyed the septic poison.

3. For extensive wounds small doses are useless; nothing under thirty grains in the twenty-four hours is of any avail. It only produces an evanescent lowering of temperature. On particular days, and in severe cases, as much as sixty grains may be necessary.

4. The use of the officinal sulphate of quinia in powder, drinking spring water after it, is absolutely bad. It upsets the healthy stomach, and in feverish gastric disturbances hinders absorption. The readily soluble hydrochlorate is best. As this is not readily accessible in the field, the sulphate may be dissolved, with a few drops of hydrochloric acid, in rain-water.

5. Where for some reason gastric administration is unadvisable, a solution of the hydrochlorate should be given in enema. The dose must then be one-fourth larger.

6. The action of quinine goes on most securely if we give a strong dose at the time of the spontaneous lowering of temperature, in the first hours of night, and very early in the morning. The condition of the heart must always be taken into account, for large doses might prove dangerous by paralysing its motor apparatus. Simultaneous stimulation, especially with wine and camphor, is a useful aid to the antiseptic treatment, and prevents the toxic action of the alkaloid.

7. One must be specially careful that the quinine contains, at most, only a trace of the inactive cinchonine. The importance of its purity in other respects need not be insisted on.

Therapeutisches Recept. Taschenbuch für Frauen- und Kinderkrankheiten nach der Wiener Schule. Von Dr. Emil Dillnberger. 2 Auflage. Wien, 1870. London: Williams and Norgate. Price 3*s*.

This is a useful little work, of a class which might be multiplied with great advantage. In the present unsettled state of opinion in therapeutics, it must at least be worth while to know what is the prevailing practice, in a large and important branch of medicine such as the diseases of women and children, in a city like Vienna, which is one of the recognized great centres of European medical teaching. The editor has done his work in a concise and terse way which renders it easily available for reference; and we would recommend all who have even a moderate knowledge of German to purchase it. They will find a complete summary of the Viennese treatment for all the special maladies of women and children, and they

will probably be equally surprised to find how closely the practice, in regard to any single disease they may refer to, agrees with the most advanced and intelligent English methods; while, on the other hand, there is no work in the English language that at all resembles Dr. Dillnberger's convenient little handy-book. Although the book is by no means a mere collection of prescriptions, but a real summary of treatment in general, the practitioner will find it contains a great many useful formulæ; we would especially instance the chapter on Vomiting of Pregnancy, where there are a variety of prescriptions which we have personally found useful, but which are not at all commonly used in this country. It would repay an English publisher, we should think, if he were to print a translation of this little book, with notes on any points where the English practice differs from the Viennese.

Clinic of the Month.

Treatment of Burns.—Mr. Skey observes that the treatment most commonly adopted by the profession for burns is the application of carron-oil, a mixture of oil and lime-water. Instead of this, the principle he is anxious to insist upon, as far preferable to any involved in the carron-oil treatment, is exhibited in the results of the application of heat to any small burn on the hand, as from a drop of melted sealing-wax. The very smart pain occasioned by this trivial accident is entirely relieved by immersing the hand in hot water, or by holding the hand to the fire for a few minutes. Half a century since this principle of treatment by local stimulants was recommended to the profession by Dr. Kentish, of Bristol, and receiving the support of Abernethy and others, was for a time very generally employed. The application was accompanied by an increase of temporary pain, which, however, passed off in the course of a few hours, and thus improved the condition of the patient. Mr. Skey endorses the advantages to be derived from this method of treatment; but he also recommends another, viz. the application of a solution of nitrate of silver in a proportionate strength, varying from five to twelve or more grains to the ounce, according to the extent and severity of the burn and the age of the patient. The whole surface of the burn should be brushed over with the solution, cotton-wool applied, and a moderate opiate administered in a glass of brandy and water, proportioned to the age and habits of the patient, with the object of counteracting the sense of chilliness that will otherwise necessarily follow in all these cases. (See *Lancet*, Aug. 27, 1870.)

Treatment of Ganglions.—Mr. Skey, in a clinical lecture, refers to the method formerly adopted, which consisted of striking the swelling a violent blow with some heavy object, as a book or rolling-pin. In preference to this coarse and unsurgical proceeding, he recommends the following, which rarely fails to obtain an early if not an immediate cure. Its object is to evacuate the *entire* contents of the cyst, and to bring its opposite surfaces into perfect apposition with each other. It is a small operation, but on the delicacy of its performance its success materially depends. Bending the hand forwards in order

to tighten the skin over the cyst, pass vertically into the centre of the tumour a broad-shouldered lancet. By a lateral movement of the instrument the orifice will be dilated, and the contents will freely escape. Now it is indispensable to the obliteration of the cyst that the whole of its contents should be evacuated, every drop and every fraction of a drop; to effect which the sac must be compressed and kneaded in every direction. Then apply a well-made thick compress of lint, and strap it down tightly with good plaster, and lastly a roller may be applied. In forty-eight hours the wound has healed and the ganglion is seen no more. (See *Lancet*, Aug. 27, 1870.)

Digitalis in Delirium Tremens.—Dr. Wiltshire publishes the details of several cases of delirium tremens in which somewhat large doses of the tincture of digitalis were administered with good effect. Four out of the five patients whose cases are given had one dose only, but that consisted of half an ounce of the tincture of the London Pharmacopœia. The other patient had first half an ounce, and then, after the lapse of some hours, two drachms. No bad or dangerous effects were observed in either of the cases narrated, and though there was a marked decrease in the frequency of the pulse, which might have produced alarm, it gained remarkably in force and in volume. As regards the *modus operandi* of digitalis, Dr. Wiltshire thinks that by retarding the cardiac contractions it gives more time for the auricles to unload themselves into the ventricles, and in this mode lessens nervous stasis; whilst from the increased force with which the ventricles, especially the left, contract, the arterial and capillary circulation may be improved. The danger that lurks in the administration of digitalis consists, according to Dr. Wiltshire, in the fact that it effects a sudden alteration in the tension of the arterial system, and unless the vessels be sound and elastic they cannot quickly enough accommodate themselves to the change; and this is equally true whether the tumour be augmented or diminished, for in the event of the arteries being rotten they give way if the tension be increased, whilst if they are rigid the tubes cannot contract upon and accommodate themselves to the lessened volume of blood if it be suddenly diminished. This, he thinks, will explain why *large* doses of digitalis are so dangerous to the aged. (Ibid.)

Hernia reduced by Cold Water.—Dr. Foster records two cases in which this simple mode of treatment proved perfectly successful. In the first case the hernia, a large oblique inguinal one, had been strangulated for sixteen hours, was extremely painful and tender to the touch, and attended with great nausea and vomiting. In the second case, the hernia, a small femoral one, had been strangulated for about ten hours, was but slightly

painful, and unattended with nausea or vomiting. In both cases the patients were advanced in life, about sixty, and the hernia had existed in a reducible form for several years. After trying the taxis patiently for about half an hour in each case without producing the slightest effect, cold water was applied. In the first case the tumour disappeared in about ten minutes under the influence of the cold water alone; in the second case, after about the same length of time, the reduction was effected almost immediately upon removing the cold-water cloth and re-applying the taxis. The patients were placed in the position usually recommended, and the cold water was applied by means of a pocket-handkerchief, the application being renewed every two or three minutes. Dr. Foster remarks that in all probability the cold water does not act simply by diminishing the contents of the sac, but that it has also a stimulating effect upon the muscular coat of the intestine, causing movement in it, and thus promoting reduction. Hence he thinks it not improbable that cold water may be preferable to ice—the latter having a depressing, rather than a stimulating action, especially when the vital tone of the intestine has been lowered by long strangulation. (See *Lancet*, Aug. 27, 1870.)

New Therapeutic Agent.—MM. Rabuteau and Peyre have been experimenting with the root of a plant in use at the Gaboon as an ordeal poison, and locally known as m' boundou, or icaja. It will be remembered that it was from this source the highly valuable Calabar bean was obtained and utilized in medicine. The authors state that even in very dilute decoctions it is very bitter, and appears to contain one or more alkaloids, since the aqueous decoction is largely precipitated by iodide of potassium, and also by phospho-molybdic acid. The poisonous effects of this substance bear some similarity to the salts of brucia; but the authors state that under certain conditions this poison does not hurt men. Some of the lower animals are readily killed by it; a dose of three milligrammes of the alcoholic extract placed under the skin of a frog kills it; and rabbits and dogs are killed by doses of from fifteen to twenty-five centigrammes of the same extract introduced into the stomach. (See *British Medical Journal*, Aug. 27, 1870.)

On the Treatment of Epilepsy.—Mr. Tyrrell, of Malvern, remarks that since the publication of his last papers upon this subject, he is pleased to find that the use of strychnia in the treatment of epilepsy has been extensively and successfully adopted both at home and abroad. In seeking to cure a disease like epilepsy it is requisite to look further than to the mere stoppage of the attacks; some positive alteration must be produced in the nervous system of the patient; that weak spot in

the nervous system that allows of the involuntary discharge of nervous power must be detected and strengthened. Irritation alone will not produce epilepsy; there must exist a predisposition, a hyper-sensitive condition of the nervous system, coupled with a want of power of control; for we see that similar causes of irritation may exist in a number of persons, but in only a very small percentage of these will epilepsy supervene, and in those few a deficient power of control of the nervous system is evidently existing. This is evidenced by a large number of adult epileptics, who in early life have suffered from infantile convulsions, a disease identical with epilepsy; the predisposition to this disease has already existed, and the system has readily yielded to exciting causes of irritation. Believing, with Schröder van der Kolk, that the medulla oblongata is the centre in which convulsion is organized, it is his habit invariably to examine carefully the upper part of the spinal column in all epileptics that come under his notice, and he has been much struck with the frequency with which pressure in this region will give rise to a species of epileptic aura, arising from or proceeding to some distant part of the body. From these considerations he proceeds to point out in what mode of administration and in what doses the greatest advantage is to be derived from the administration of strychnia. On his first trials it appeared to him that large doses were necessary. Lately, however, he has found that the use of small doses given very frequently not only produces equally favourable results, but that the good effects follow more quickly and there is less chance of attacks arising from accidental irritations in the early stages of treatment. He observes that Dr. Brown-Séquard and others have called attention to the benefit to be obtained by the exhibition of the sulphate of quinine in cases where the convulsions are marked by periodicity. All that can be said of quinine may be said with still greater truth of strychnia. In those cases where the disorder has originated in deranged menstrual functions, and where the attacks come on with great regularity at the catamenial period, he always looks to strychnia with the greatest confidence. (See *Med. Times and Gazette*, August 20, 1870.)

Extracts from British and Foreign Journals.

New Method of suturing the Intestine.—M. Bérenger Férand gives the following suggestion for a new kind of suture in cases of wound of the intestine. Four or five ordinary pins are thrust through two small pieces of cork, each as long as the wound, and about quarter of an inch thick, so that the points of the pins project like a comb. The heads are secured on the opposite side with a little sealing-wax. The pieces of cork thus armed are introduced into the lumen of the intestine, the one on the one side, the other on the other side of the edge of the wound, and the pin-points are then thrust through the intestinal wall from within outwards, and at a distance of one or two millimètres from the edge; the pieces of cork are now so turned that the points of the pins are opposed to each other, and the edges of the wound turned inwards, the serous surfaces coming into contact. The corks are now pressed towards one another, till the pins are buried in the corks. The opposite surfaces soon adhere, the corks become free in the interior of the gut, and are discharged with the fæces, any injury from the pins being prevented by the imbedding of their points. (*Allgem. Wiener Med. Zeit.*, No. 19.)

Therapeutic Value of the Bromides.—At the close of an interesting paper on the effects and therapeutic uses of the bromides, Dr. M'Elroy, of Ohio, thus sums up their physiological effects and clinical uses:—1. From the inherent relations of bromine and the bromides to the organic tissues and structures of the human body, their effects must always be that of promoting destructive metamorphosis or waste: first, of all matter below the normal dynamic condition; secondly, of tissue or structure of type or form foreign to the human body; and lastly, of the normal tissues themselves. 2. They are never indicated therapeutically, except when there is matter or tissue in the body which it is desirable to eliminate from it. 3. They possess neither inherited nor acquired anæsthetic properties nor hypnotic effects, as chloroform, ether, opium, or cannabis indica, which act by retarding destructive metamorphosis; but may, by promoting destructive metamorphosis of retained effete matter, be followed indirectly by anæsthetic or hypnotic effects, in the same way as evacuation of the bladder of retained urine by the

catheter. 4. They are contra-indicated when nutrition is much impaired, or the rate of tissue waste more than natural, and when structural changes or loss of form by substituting tissue of lower for that of higher organization have impaired the dynamic integrity of the nerve masses, as in locomotor ataxy, insanity, spinal paresis, &c. 5. They are only indicated when the organic processes of life are restrained or interfered with by adventitious circumstances to resume their normal working on the removal of the restraint. 6. Their effects on persons living luxuriously, and leading inactive or sedentary lives, and on all in whom tissue metamorphosis is sluggishly performed, is to increase the rate of waste, and to compensate to some extent for the physical exercise necessary to maintain the normal velocity of tissue waste or changes. (*New York Medical Journal*, vol. xi. No. 5.)

The Therapeutic Value of Digitalis in Enteric Typhus.—Dr. Ernest Hankel observes that the value of digitalis in enteric typhus has already been established by Wunderlich and Thomas. The infusion was administered, but as soon as the frequency of the pulse fell, the use of the remedy was immediately omitted. When large doses were given, vomiting sometimes occurred after the first and last, but without disadvantage to the patient. Such large doses contained about 30 grains to the 4 ounces. The entire quantity of digitalis required to reduce the frequency of the pulse varied from about 30 to 70 grains, the period of the attack having apparently no influence. Numerous and careful observations made upon 80 cases, of which 45 recovered, enabled the author to draw the following conclusions:—1. The action of digitalis in sufficient doses causes a reduction of the duration of the fever amounting to several days, and a diminution of the frequency of the pulse extending over several weeks. Its exhibition is consequently indicated in cases where the evening temperature attains the height of 105° Fahr., and when there is only a slight remission in the morning, as well as in cases in which the contractions of the heart amount to 120 in the minute, and the patient is in the second week of the fever. 2. Digitalis diminishes delirium; in this respect having a more powerful influence than large doses of quinine, or than cold baths or wrappings. We possess also, however, in morphia an agent that exercises a powerful influence in suppressing delirium if given in sufficient doses to procure sleep, though the delirium often reappears in the morning, or at least an equal dose of the drug is required on the following evening. The objection to morphia lies in its disagreeable after and secondary effects. 3. The gravity of a case of typhus is determined not only by the height of the temperature, but also especially by

the frequency and quality of the pulse. In reference to the latter point it is indubitable that the pulse, especially when very small, undergoes persistent augmentation in volume by the application of digitalis, and is hence to be employed when the pulse is small and feeble. 4. The employment of digitalis is not contra-indicated in consequence of the presence of albuminuria. 5. Two kinds of collapse are distinguishable in typhus: collapse with lowered temperature and diminished frequency of the pulse, and collapse with augmented temperature and frequency of the pulse. The first generally furnishes a good prognosis, especially when the depression has been occasioned by digitalis; the pulse, however, should be very carefully attended to. 6. The disposition to hæmorrhage is not increased by the use of digitalis, so that if hæmorrhage occur it is not contra-indicated. 7. The catarrh of the intestinal canal is indeed temporarily increased by this drug, but by no means forms a contra-indication to it. 8. Lastly, digitalis appears to prolong the duration of the disease, and hence it should only be prescribed when either the febrile symptoms, the frequency or smallness of the pulse, or the cerebral symptoms, constitute threatening symptoms. (*Archiv der Heilkunde*, Band x. 6.)

Iodine a Remedy for the Incontinence of Urine of the Aged.—Dr. J. B. Schmidt, after referring to the treatment adopted by Oppolzer in this affection when dependent on debility of the sphincter vesicæ, viz. the application of astringents, as rhatany, tannin, and iron, relates two cases, one in a woman of 80, and another in a man of 74 years of age, in which a rapid cure was effected by the use of this remedy; but when it had once been given it could not be dropped without a recurrence of the affection, and it had consequently to be continued till death occurred. The quantity given was a drop of the tincture every two hours; at a later period it was given from two to six times a day, and in addition one-tenth of a grain of iodine was given in pills. (*Allgemein Med. Zeit.*, 1870, No. 18.)

Treatment of Phthisis and Diphtheritis with Carbolic Acid.—Dr. Rothe recommends the employment of inhalations of carbolic acid in phthisis. His formula is as follows:—

Acid carb. crystall.,
Spirit. vini rectific., āā. gr. xx ad xl.
Distilled water, gtt. 100.
Tinct. of iodine, gtt. xx.

Of this mixture from ten to twenty drops are to be added to an ounce of luke warm water, and used as an inhalation by a spray producer, the inhalation to be repeated from three to five times

daily. In a somewhat limited experience Rothe found a remarkable improvement in the cough, expectoration, appetite, strength, &c., of the patients upon whom the treatment was employed. He therefore invites the profession to give it a more extended trial. His experiments induce him to regard the remedy as being especially adapted to the earlier stages of the disease. The inhalations should be persisted in for months in connection with other recognized methods of treatment. The only contra-indication for their employment appeared to be the recent irritation of the entire bronchial mucous membrane of a catarrhal nature. In diphtheritis, Rothe employs a similar solution, with which he brushes the false memorane three times daily: in addition the patient is made to gargle every fifteen minutes with ten or fifteen drops of the mixture in a large cup of lukewarm water; at the same time digitalis for the fever and tinctura ferri chloridi were administered. The author relates fifteen cases of undoubted diphtheritis treated as stated, with fourteen recoveries. (*New York Medical Journal*, Aug. 1870.)

Treatment of Cholera Infantum.—Two papers on this subject appear in the American *Practitioner* by Dr. Wible and Dr. Yandell. The former considers that great attention should be paid that the food is of proper quality; and if that of the mother should from any cause be found to be unwholesome, the child should be weaned and fed on rich cow's milk, diluted with water and lime-water. The action of the skin should be promoted by baths, and good ventilation and sufficient sleep enjoined. If vomiting should be the prominent symptom, a grain or two of bicarbonate of potash in a teaspoonful of sweetened mint-water may be given every hour; but if it still persists, three or four grains of calomel, followed in six or eight hours by warm enemata, should be given. If in addition to the vomiting there be purging, a drop or less of laudanum may be added to the dose of potash and mint-water. The addition of a little creosote may also have the effect of more promptly restraining the vomiting. When the vomiting and purging are excessive, so as to endanger collapse, grain doses of acetate of lead, repeated every hour, are of great service, and the child should be restricted to barley-water. Where the disease is less active, and the discharges contain undigested food, no attempt should be made to arrest them, and it may even be requisite to give an occasional laxative, such as tinct. rhei ʒiij; potass. bicarb., magnes. carb. āā. gr. xx; aq. menth. pip. ʒj, syrupi ʒj: dose, a teaspoonful every eight hours. If dysenteric symptoms come on, opiates by the rectum are best. When the disease assumes a protracted form, the nutrition of the patient becomes all important. Veal broth, with panada and milk, constitute a good food. Raw meat is sometimes beneficial.

Vegetable astringents, especially a decoction of the geranium maculatum, are valuable in this form, with sulphate of quinine. Stimulants, such as tincture of cinnamon, may also be required in cases of great debility with emaciation. He objects to chalk mixtures, blue powders, and alterative doses of calomel. Dr. Yandell, on the contrary, places calomel foremost amongst the remedies for this disease. He gives the child, as soon as he is called to it, a grain, half a grain, or two or three grains of calomel, according to age and circumstances, and generally repeats the dose only once in twenty-four hours, but in urgent cases it should be repeated twice a day, or even once every four hours, until the discharges have lost their watery consistence. The medicine may be most conveniently administered dry on the tongue of the child. In nearly all cases opiates are indispensable to restrain the purging and relieve griping until the calomel has had time to effect a change in the secretions. They may be administered in the shape of an enema. He has seen creosote promptly arrest obstinate vomiting, and it will also check diarrhœa. When the discharges are profuse and wasting, threatening collapse, he orders besides calomel and opium sinapisms and hot applications to the extremities, with alcoholic stimulants internally. The thirst so commonly present should be allayed by the free exhibition of iced water. Dr. Yandell also thinks the diet is of great importance, but is of opinion that the child may take almost whatever it has a craving for. (*American Practitioner*, Aug. 1870.)

Cure of Rheumatic Sweating by Cold Lotions.—In the Hôpital de St. Pitié, a case came under the care of M. Peter of a woman who in the course of a severe attack of scarlet fever suffered a rheumatic affection of the joints of the toes and foot. This was followed by a rheumatic affection of the right sterno cleido-mastoid, and by a systolic bruit due to endocarditis. The case recalled to his memory other patients that had come under his care, in whom cardiac disease was present, but who had only suffered from scarlet fever, and never from rheumatism, yet who suffered from febrile articular affections whilst in the hospital. M. Peter admits the existence of a connection between scarlet fever and endocarditis in many cases, and believes that organic affections of the heart are often the result from this disease. In the progress of such affections profuse perspirations are apt to occur, and to remedy this M. Peter has found lotions of cold vinegar and water, with stimulation of the bowels by means of calomel and squill, exceedingly effectual. (*Union Médicale*, No. 54, 1870.)

Notes and Queries.

DEPARTMENT OF NEW INVENTIONS.

Owing to complaints which have reached us, we have thought proper to make an analysis of sundry samples of commercial *citrate of iron and quinine*, taken promiscuously from London shops.

Citrate of iron and quinine prepared according to the directions of the British Pharmacopœia, should contain 20 per cent. of ferric oxide, and 16 per cent. of quinine.

The annexed table shows the percentages of the above in six samples analysed, bought at the undermentioned chemists :—

No. I. A. Cooper, Abingdon Terrace, Kensington.—Olive-green scales.

No. II. W. Lambert Kiddle, 34, Tavistock Place.—Dark olive-green scales.

No. III. W. J. Jones, 3, Newland Terrace, Kensington.—Very small olive-green scales.

No. IV. Burgoyne, Burbidges and Co.—Pale yellowish-green scales.

No. V. Glover and Co., 19, Goodges Street, W.—Golden-brown scales.

No. VI. Knowles, 33, Seymour Street, Euston Square.—Golden-brown scales.

	Ferric Oxide.	Quinine.
B. P.	20 per cent.	16 per cent.
No. I.	19·3 „	17·5 „
No. II.	20·2 „	16·2 „
No. III.	21·4 „	15·4 „
No. IV.	21·3 „	7·1 „
No. V.	20·9 „	4·2 „
No. VI.	20·4 „	4·1 „

CORRESPONDENCE.

The Supply of Vital Force from Non-Nitrogenous Food.—We have received a courteous letter from Dr. Munroe, of Hull, one of the most respected representatives of the tee-total party within the profession, in which he inquires where

the evidence exists on which we grounded an assertion in a review published in our July number. The statement in question was to this effect: that recent research goes entirely in favour of the belief that the bulk of dynamic work done in the body is the outcome of the immediate oxidation of hydrocarbons and hydrates of carbon derived from the food, and which have never been incorporated in the formed tissues. The evidence for this is to be found in various quarters: (1) In the experiments of Fick and Wislicenus, originally published in 1866, and of which a sufficient account for our correspondent's purpose will be found in a paper in the *Philosophical Transactions*, which will be immediately referred to, these experiments showed that the largest portion of the dynamic work done by the bodies of the experimenters, during an ascent of the Faulhorn, must have been at the expense of non-nitrogenous food. (2) Experiments by Dr. Parkes, recorded in the already-mentioned Royal Society paper, in which Fick's experiments were repeated for a longer period, and it was established (*a*) that strong muscular exertion can be well maintained for two or three days without a particle of nitrogenous food, and that the amount of the nitrogen excretions during this time, together with the observations on weight, conclusively proves the majority of the work to have been done, *not* at the expense of tissue, but of the food; but that (*b*) if the experiment be prolonged after this time bodily vigour begins to fail, showing that a certain amount of nitrogen is desirable, perhaps absolutely necessary, as an ingredient of the food. (3) Even the urea is by no means proved to result entirely from tissue waste. On the contrary it would appear that large quantities of the albuminoid matters of the food never pass into the tissues of the organs, but are broken up, either in the blood or (Kühne, Archiv f. path. Anat. 1867) in the intestinal canal, and must apparently contribute in large degree to the urea-excretion. And quite lately, Bischoff and Voit (who were formerly the strongest opponents of the idea of any derivation of urea directly from food) have made remarkable admissions on this subject. It is true that Voit, in a recent paper (Zeitsch. f. Biologie, IV. B., 4 Hft. 1868), maintains that the whole aspect of the controversy is changed since the original controversy about the so-called "luxus-consumption" was started. But the sum-total of his view, when cleared from the slight degree of mystification in which he envelopes it, is this: a normal diet, according to our present knowledge, should theoretically consist in much the largest proportion of non-nitrogenous matter, with only a minimum of nitrogenous; practically, however, it appears that a larger quantity of albuminoid peptones than can be appropriated by the organs, may be advantageously

employed in food. But he says quite plainly that "in the earlier sense of the word there is no such thing as tissue-exchange, *i.e.* a destruction of organized tissues to supply the force needed for work." With this admission, as it appears to us, the controversy is practically settled; and henceforth it must be understood that all force production, in normal states, is the result of changes taking place exterior to the tissues,—changes, in fact, of the incoming material, and in that case there can be no question that the bulk of vital work must be supported by the non-nitrogenous elements. Did Dr. Munroe ever reflect upon the nutrition of the Turkish porters at Constantinople, the most powerful and hard-working men in the world, which consists, almost literally, of nothing but rice and a little fat? [ED. PRACT.]

HYDRATE OF CHLORAL IN A CASE OF HYSTERICAL COMA.—Mr. H. A. Allbutt, of Leeds, sends us the following:—"I was called up in the night of July 28th to see Miss L——. I found her suffering from severe pain in the cardiac region; she was almost insensible, and kept complaining of the cardiac pain. I diagnosed the nature of the case at once—a species of hysteria. I gave her a mixture containing valerian, henbane, and ether. I was called up two hours after, and found the stupor had increased. She continued muttering 'poor Annie.' I ordered her a draught containing chloral hyd. ℈ss, syr. rhœados ℥iss, aq. ad. ℥ij. I saw her the following morning, and found her nearly well. She had a similar draught the following night at bed-time. The next day she was almost cured. I braced up her system with strychnia and iron, and kept her bowels gently open, and at the end of ten days she was quite restored to health. In this case the chloral acted as a charm in restoring the normal action of the brain and spinal cord."

PUNCTURE OF THE COLON FOR RELIEF OF TYMPANITIS.—Mr. J. Hancocke Wathen, of Fishguard, sends us the following note:—"Having read in the *Practitioner* for February 1869 the notes of a case of obstruction of the bowels, in which Dr. Clifford Allbutt resorted to puncture of the colon for the relief of tympanitis, I determined to adopt this procedure in the next suitable case. Such a case came under notice in a few days. On February 18 my father, Mr. Wathen, was requested to visit Mrs. G——, aged 29, who had half an hour previously, while engaged in some domestic duties, been suddenly seized with most severe pain in the lower part of the abdomen. She was cold and collapsed, and presented the appearance of one suffering from severe shock. She supposed herself to be about six weeks gone in pregnancy, and stated that in her previous pregnancies she had always experienced some pain and faintness about

this period. Acute peritonitis soon declared itself; this, under full doses of opium fomentations, &c., was to a great extent quelled, but the abdomen became intensely tympanitic. We failed to obtain any relief, although free fæcal evacuations were produced by turpentine and castor-oil enemata, administered with O'Byrne's tube. The distension continued, causing great distress; the patient became rapidly exhausted, until the third day, when she consented to my puncturing the abdomen, which I did after consulting with my father and Mr. J. D. Brown, of Haverfordwest. I first plunged a No. 1 trocar into the transverse colon, then into the descending, and lastly into the ascending colon. The two first punctures emitted gas with sufficient force to blow a candle out, when held near the canula. The patient expressed herself as much relieved, the abdomen being greatly diminished in size. The chief object of the punctures, viz. relief to the patient, was to a great extent obtained, but she gradually became weaker and more exhausted, and sank next morning.

I feel impressed that great benefit may be derived from this simple and painless operation, as Dr. Allbutt very rightly terms it, in those cases which resist the usual remedies; indeed I cannot conceive any objection that can be urged against it, seeing how frequently it is practised on the lower animals with the very best results.

Unfortunately, no post-mortem was allowed in the case now recorded.

Yellow Sulphate of Mercury in Croup.—Mr. Crighton, of Tavistock, sends us the following:—"In the September number of the *Practitioner* there is a notice of the treatment of croup by the yellow sulphate of mercury, which if adopted would, I much fear, lead to unpleasant results. The dose which is recommended of such an irritant—three to five grains—seems likely to be attended with risk in very young children, while its comparatively slow action as an emetic—sometimes fifteen minutes—its insolubility, its acrid, metallic taste, notwithstanding the claim for it by Dr. Barker of tastelessness, render it much inferior to the sulphate of copper. The old turbith mineral was formerly used as an emetic, but on account of the disadvantages and risks which I have mentioned, has long been superseded by safer and more efficient agents. I enclose a contribution to the therapeutics of croup, which conveys, I believe, a fair estimate of the true value of sulphate of copper in that disease."

[The pamphlet enclosed with the above contains an interesting account of the results of treatment in fifty cases of croup; the sulphate of copper being administered, at the commencement of the attack, in half-grain doses repeated every fifteen minutes till vomiting was produced.]

Bromide of Potassium and Acetic Acid in Cancer.—Mr. Henry Osborn, of Southampton, writes the following :—"Observing in the *Practitioner* of May last a quotation from a paper of mine published in the *Medical Times and Gazette*, I would beg to state that although I have not had an opportunity of trying the bromide of potassium and acetic acid in many cases of cancer, I nevertheless am able to state that those who have given it a trial during the last twelve months have derived the greatest relief from its use. The proportion of bromide of potassium and acetic acid should be in accordance with the severity of the pain. In one case I ordered it to the extent of three drachms of bromide to one ounce of acetic acid (B. P.) and five ounces of water ; to be used warm, and kept constantly applied to the breast by saturating a piece of lint and covering it with oil silk. If abrasion of the cuticle or a cicatrix has formed, the lotion may be more readily absorbed, or especially if ulceration has taken place; in that case the lotion should be diluted accordingly. To find a simple remedy, incapable of disturbing the digestive functions, but capable of relieving severe pain and producing natural rest, extending over a period of twelve months, and reducing tumours to such an extent as not to require an operation, is worth, Sir, the additional publication which you have given, in order that further trials may be made to test its value. One patient labouring under cancer of the mamma for some years, informed me that she was obliged to walk the room at night, as the pain prevented sleep and rest ; but since the constant application of the lotion she has had good nights, and is enabled to use her arm more freely by day, &c. This patient preferred applying the lotion by means of lint instead of flannel ; she also informed me that the lotion produced a comfortable warmth, and removed that sense of 'heaviness' of the breast—being able to turn in bed without supporting it. In order to give the remedy a fair trial, I have withheld opiates and anodynes, and prescribed correctives, such as aperients, alkalies, &c., as occasion requires.

"A woman, aged 50, having a large, indurated tumour of the mammary gland, unattached to the deep-seated parts, but accompanied with great pain, similar to that of the formation of an abscess, I ordered the lotion to be diluted with warm water, and applied as above stated. Instead, however, of affording the least relief, the pain was greatly increased by it, and rapid formation of pus took place, which discharged itself through the nipple before I had an opportunity of seeing the patient the second time, as she resided in the country. The patient, however, recovered rapidly under tonic treatment. (August, 1870.)

"P.S.—When bromide of potassium is mixed with dilute acetic acid, no decomposition appears to take place : it is possible, how-

ever, that some chemical change may result. When a mineral acid is mixed with an alkaline iodide or bromide, decomposition is the result, but the process is slow or rapid in proportion to the degree of dilution. In combining our remedial agents, it is important to know what change takes place, and it is often a great convenience to combine *incompatibles* so long as we know what new compounds are formed. For instance, when there is intolerance of iodide of potassium, we may sometimes find tolerance by converting it into iodide of magnesium and sulphate of potash, by the union of sulphate of magnesia and iodide of potassium. We sometimes see chlorate of potash combined with vegetable infusions, but it is a question whether the oxygen of the salt is not given up to the vegetable instead of oxidising the morbid products in disease when administered with that object in view."

Bibliography.[1]

As an evidence of the serious interference exerted by War upon the pursuits of Peace, may be mentioned the fact that on inquiry at Messrs. Williams and Norgate we find they have not received a single medical publication during the past month from France, and the following are the only ones sent over from Germany. It may be remarked, however, that September is in general a slack month as regards professional works, most authors, as well as booksellers, preferring to wait until the commencement of the winter session.

Nitzsche, F. R. Die Heilung orthopädischer Gebrechen. Dresden. 2*s.* 6*d.*

Nitzsche, F. R. Die Heilung der Störungen in der Blutcirculation. Dresden. 2*s.* 6*d.*

Nitzsche, F. R. Die Heilung der Unterleibs-Beschwerden. Dresden. 2*s.* 6*d.*

Nitzsche, F. R. Die Heilung sexuelles Schwächen. Dresden 2*s.* 6*d.*

Nitzsche, F. R. Wie erhält man sich gesund? Dresden. 1*s.* 6*d.*

[1] Any of the foreign works may be procured by application to Williams and Norgate, of Henrietta Street, Covent Garden, W.C.; or Messrs. Dulau, of Soho Square, W.C.

THE PRACTITIONER.

NOVEMBER, 1870.

Original Communications.

THE THERAPEUTIC VALUE OF SOME SALTS OF POTASH IN REDUCING OR MODIFYING THE AMOUNT OF URIC ACID IN RENAL CALCULUS AND ALLIED URINARY DISORDERS.

BY W. R. BASHAM, M.D.

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The action of the compounds of Potash,—whether as liquor potassæ, or the bicarbonate, or in the form of organic salts of this alkali, as acetate, citrate, or tartrate—in modifying the symptoms produced by an excess in the amount of this acid in the urine, as in cases of crystalline deposits of red sand, or in gravel, or in the more severe symptoms of renal calculus, has been appreciated and tested by the experience of many generations of observers. The old books on therapeutics and pharmacy contain abundant evidence of the supposed lithontriptic power of this and other alkalies; and although it is now admitted that the direct solvent action or dissolving power of the Potash salts on uric acid concretions by injection into the bladder is insignificant and negative, yet it is clearly established, and that by long experience, that this alkali and its salts do exercise a very manifest power when taken by the mouth, in modifying the amount of uric acid in the urine in these cases of crystalline

deposits of that acid, as red sand or gravel, rapidly causing the disappearance of the first, and gradually but effectually removing the painful and distressing consequences of the last. The interpretation of the therapeutic action of Potash and its compounds in these cases has hitherto been very simple and intelligible:—The chemical combination of an insoluble organic acid with a base forming a soluble and easily excreted salt: an alkali neutralising an acid and forming a soluble urate of Potash, which as such is excreted readily with other ingredients of the urine. Such has been the generally accepted interpretation of the therapeutic action of Potash and its salts in controlling and reducing the amount of crystalline or amorphous uric acid escaping through the kidneys.

The observations and interesting experiments of Dr. Roberts, of Manchester, on the solvent treatment of uric acid concretions by carbonate of Potash, clearly establish the chemical fact that when a solution of carbonate of Potash of a definite strength—about sixty grains to the pint of water—is brought to act on uric acid calculi out of the body at a blood temperature, the solvent power of the alkaline solution produced a daily average loss of weight in the calculus of 20 per cent. The formation of a soluble urate, with corresponding loss of weight in the calculus, was modified in a remarkable manner by the strength of the Potash solution. Sixty grains to the pint of water represented the maximum solvent power; this action decreasing as the proportion of the alkali increased, till at a strength of two hundred and forty grains to the pint the daily average loss of weight was *nil.* This was caused by the stronger solution rapidly forming on the surface of the calculus an insoluble bi-urate of Potash, which effectually screened the uric acid from further solution.

These observations establish with certainty the fact that uric acid is slowly dissolved out of the body in solutions of carbonate of Potash; and Dr. Roberts's experiments further prove that the urine of patients who had taken the organic Potash salts, the acetate or citrate, and which had become alkaline through the presence of carbonate of Potash, into which the organic salts are invariably converted in their passage through the urine, was capable, out of the body at a blood heat, of dissolving uric acid at the mean rate of twelve grains in the twenty-four hours.

These facts seem to afford a satisfactory chemical explanation of the therapeutic action of the Potash salts when taken for the relief of crystalline deposits of uric acid. It is simply the conversion of an insoluble organic acid into a soluble and easily excreted combination of uric acid and a Potash base; for the inference is, that the urine, becoming alkaline, or at least containing a large percentage of an alkaline carbonate, is capable of dissolving the uric acid, probably as soon as formed, and thus, in cases of red sand and gravel, preventing the formation or deposit of crystalline grains, or amorphous masses of uric acid, which by their irritant action are the cause of the pain and distress and urgent calls to frequent micturition, which are such prominent symptoms in these disorders.

The therapeutic value of the carbonate of Potash, or the organic salts of that base, which clinical observation has long established, is thus accounted for on a purely chemical basis. A soluble urate of Potash takes the place of an insoluble uric acid.

Till very recently my own convictions were in strict accordance with these views, so far as the action of the alkali and its organic salts within the body on uric acid crystals or deposits could be explained. On several occasions during the past year, while examining the urine of patients who were or who had been suffering either from red sand or gravel, and who had been taking the citrate of Potash with great relief to their symptoms, I was not more forcibly struck with the constant increase of urea shown by volumetric analysis with the mercuric nitrate, than by my constant failure to recover any but the smallest amount of uric acid, and not at all proportioned to the quantity present before the citrate had been taken, nor in any degree proportioned to the carbonated alkali present in the urine. I could not satisfy myself that the uric acid had passed out in the urine as a urate of Potash. What had become of it? The abatement of all the symptoms characteristic of uric acid in excess, the subsidence of the irritation in the renal organs, the relief to the sense of strangury or frequent calls to micturition, particularly in cases of gravel—seemed assurance of the disappearance of the excess of uric acid.

But what had become of it? It would not be found as urate

of Potash. The researches of Mr. Schunck on oxalurate of ammonia in the urine, published in the *Transactions of the Royal Society*, appeared to me to open a clue to the interpretation of the metamorphosis which the uric acid had undergone, and satisfactorily to account for the disappearance of the uric acid, and the presence of so large an increase in the urea by the agency of the Potash salts.

Guided by these experiments of Mr. Schunck, I examined more carefully the urine of patients who were taking the bicarbonate or the citrate of Potash for the relief of symptoms arising from uric acid deposits.

Uric acid in the presence of alkalies or alkaline carbonates readily becomes oxidised, and converted into oxaluric acid; which in its turn is readily metamorphosed into oxalic acid and urea. Mr. Schunck's experiments clearly establish the fact that oxaluric acid, or the oxalurate of ammonia, is formed by the oxidation of uric acid; and that the amount of oxaluric acid in the urine may be considered as always proportioned to the amount of uric acid previously present.

In the laboratory no agents hasten the conversion of uric acid into oxaluric acid more readily than the alkaline salts; and these same salts, by exposure to the air, as readily facilitate the splitting-up of oxaluric acid into oxalic acid and urea. There is every probability, almost amounting to absolute demonstration, that the same process takes place within the organism when uric acid is subjected to the agency of these alkaline salts.

The practical point for consideration is therefore this:—As uric acid when in healthy proportion is, in the presence of the alkaline salts of the blood, transformed into oxaluric acid, which probably as oxalurate of ammonia is readily excreted, and which on exposure to the air is quickly split up into oxalic acid and urea; can uric acid when morbidly in excess, from errors of assimilation or other causes, by the internal agency of alkaline salts, likewise become converted into oxaluric acid, and eventually into oxalic acid and urea? In the uric acid diathesis it may be conceived that uric acid is formed in excess of what the alkaline salts of the blood are capable of transforming. The question then is, if the blood be charged with these salines till the urine shows evidence of their passage through the system in

excess, will the abnormal amount of uric acid be reduced and transformed into more easily-excreted material, in a manner similar to what appears to take place when the constituents of the urine are in healthy equilibrium ?

In an endeavour to establish this point, the urine of patients suffering from uric acid deposits, either as red sand or gravel, was submitted to examination before and during the taking internally of moderate doses of the bicarbonate, or of the citrate of Potash. I may state that the citrate of Potash was usually employed in doses of half a drachm of the bicarbonate with two tablespoonfuls of lemon-juice, as being the most palatable, and therefore taken with more certainty. It must be recollected also that these organic alkaline salts are always converted into carbonates in their passage through the system, and in that form appear in the urine subsequently excreted.

The amount of urea as well as of uric acid, in a given weight of urine, was first determined before the saline was administered, and while the urine contained a large excess of uric acid.

In the course of two or three days, or so soon as the symptoms indicative of uric acid in excess had abated, and the crystalline deposit had disappeared from the urine, it was again examined to determine the amount of urea and uric acid present. The urea was determined by volumetric analysis with the mercuric nitrate; the uric acid by precipitation by hydrochloric acid. The oxalic acid as oxalate of lime was approximately estimated by free exposure of a given weight of urine to the air, and collection of the oxalate crystals by subsidence in an appropriate tube. The limits of this paper do not permit me to give the results in a tabulated form ; but it may be sufficient for the present purpose to state that, in every analysis before the saline was administered, the urine contained the minimum amount of urea and a maximum amount of uric acid; while after the subsidence of the symptoms of urinary irritation, and after an interval of about three days on an average, the urea was in one case trebled in amount, and in others more than doubled, while the uric acid was reduced to a fractional part of what exists in healthy urine. Moreover, in all these cases a most abundant crop of crystals of oxalate of lime after free exposure to the air was always observed, none being present if

the urine was microscopically observed immediately on its being voided.

Adopting the process of Mr. Schunck, of filtering the urine through animal charcoal, washing the filter with boiling alcohol and subsequent evaporation, I succeeded in obtaining in the field of the microscope numerous needle-like crystals of an oxalurate in more than one of these analyses.

The result of these researches induces me to assume that the therapeutic or remedial action of these alkaline salts in the uric acid diathesis is capable of a different interpretation to that which has been hitherto offered; and I also venture to think that the value and usefulness of these saline remedies may be extended to a great variety of disorders, which, however different in name, have yet but one pathological source—the retention in the organism of one of the products of nitrogenous metamorphosis, which, while retained, seems capable of disturbing, according to the peculiar organization of the individual, almost every organ and texture of the body.

It may not be out of place here to mention some of the more prominent disorders or disturbances which are traced to retention or incomplete metamorphosis of the uric acid, and which are always more or less benefited by treatment by alkaline salines.

Uric acid crystalline deposits in the urine, red sand, gravel, and renal calculus of uric acid,—in these several disorders the distressing irritation of the urinary passages is quickly allayed.

In renal calculus, as well as gravel, the action of the alkaline salt is not the solution of the already-formed concretion, for the amount which can be taken internally is infinitely too small for such a result. Its action is to prevent further increase of the deposit of uric acid; to arrest the growth and enlargement of the calculus, by transforming the uric acid as soon as formed into the oxalurate, either of ammonia or Potash, and thus facilitating its excretion as urea and oxalic acid. If unchecked, the deposit goes on augmenting the volume of the calculus, or multiplying the minute accretions of amorphous uric acid which constitute the so-called gravel in the urine. Many cases of renal calculus being arrested in its growth, and of gravel eventually cured and the dispositions to these concretions entirely removed,

might be detailed, in which the subsidence and arrest of the disorder was brought about exclusively by the use of the Potash citrate.

A paroxysm of gout represents the sequel to, not the commencement of, a morbid process. Uric acid has been accumulating till its excess as a urate of soda gets deposited, with severe local inflammation in the tendinous, cartilaginous, and fibrous structures of the joints. These alkaline salts can do little, therefore, in the acme of the paroxysm, either in reducing the inflammation or modifying the attack. It is in the interval of the attacks, it is when the gouty individual thinks himself free, and when, thus apparently emancipated from the evils of hereditary or acquired disease, he indulges in the habits and luxuries which minister, as time wears on, to the accumulation of the elements of gout; it is in these intervals that the daily, almost habitual use of small doses of the Potash citrate will keep gout at bay, and respite the patient from attacks during intervals the length of which he has never known before.

These results are explicable only by the transformation of the gouty element, uric acid, in such a manner that it is no longer capable of being retained as an excrementitious product.

In cases of the so-called rheumatic gout, whether the textures implicated be the deep-seated cartilaginous structures of the large joints, constituting gouty arthritis, or the more superficial tendinous expansions on the head of the bone, sometimes called rheumatic gout, the influence of these alkaline salts, if less marked than in the more active forms of gout, is nevertheless of great benefit in restoring motility to the stiffened and painful joints. In psoriasis and lepra, in several of thé eczematous forms of skin disease, in several varieties of the herpetic eruptions, the urine at one stage is marked by the diminution of the amount of uric acid present, and only when the disorder disappears does the urine return to its healthy composition. The uric acid in these cases is not replaced by urea, which is often found in a minimum proportion. The inference is, therefore, that the disorders are in some measure connected with the defective metamorphosis of uric acid; and the inference is still further strengthened by the well-known favourable results of an alkaline plan of treatment.

Forms of indigestion known as gouty dyspepsia, a form of bronchitis occurring in gouty subjects in the intervals of the attacks, quickly relieved by the appearance of the local inflammation in the joints, and often termed gouty bronchitis, are both benefited in a very marked degree by the Potash citrate taken freely three or four times a day.

The interesting question of the therapeutic value of certain alkaline salts in a given class of disorders, then, stands thus. Empirically and clinically for generations the remedial agency, the lithontriptic virtues, of alkaline preparations in cases of gravel, red sand, or renal calculus, has been universally acknowledged. The interpretation of this action for a long period was fanciful and erroneous according to the prevalence of the doctrines of the humorists or solidists.

As chemical analysis became more accurate, and the differences in the composition of the several renal and vesical concretions were better known, a simple and apparently satisfactory chemical interpretation of this remedial agency succeeded. It was the conversion of an insoluble organic acid into a soluble salt by an alkaline base, and consequently a more ready excretion in this form.

A more complex but, I venture to think, a more satisfactory interpretation of the mode of action of these alkaline salts, is now offered.

It is only by this form of interpretation that the increase of urea and of oxalic acid in these cases can be accounted for. The interpretation, moreover, is strictly in accordance with what the researches of the ablest chemists have recently established, namely, the conversion, both in and out of the body, of uric acid, by the agency of oxidising agents, into oxaluric acid, and ultimately into urea and oxalic acid.

I think that such inquiries as these are calculated to do more than satisfy a laudable curiosity into the mode of action of any given remedy. They assure us of the value of the remedy on a physio-chemical basis, and they teach us that such remedies are not mere antidotes to an ideal morbid entity, but that they are agents acting strictly in accordance with physiological laws, supplying a material capable of moderating the effects of a perturbation in those laws, and regulating the disturbance by a

process identical with that which prevails when the forces are acting with the uniformity of health.

The action of these alkaline salts, then, appears to be to facilitate the metamorphosis of uric acid and hasten its conversion into oxaluric acid, which, as oxalurate of ammonia or Potash, is excreted in the urine, and which after passing from the bladder is quickly split up into oxalic acid and urea.

It may be supposed, according to this interpretation, that the alkaline salts given in the uric acid diathesis would promote, if not create, a dangerous tendency to the formation of oxalate of lime concretion, and thus one evil would be exchanged for another. But this is not so. The oxalurate formed with the other ingredients of the urine remains as such while within the urinary organs: it is only when passed and exposed to further oxidation in the air that it eventually breaks up into oxalic acid and urea. The moment the oxalic acid is set free, such is its affinity for lime, that the lime salts of the urine, more particularly the phosphate, yield up a portion of their base to form the insoluble crystalline oxalate of lime. It cannot too forcibly be impressed on the practitioner that oxalate of lime crystals can never be detected in urine received and examined immediately from the bladder; but that the same urine after free exposure to the air will in most cases yield an abundant sediment of them.

It only remains to state the manner and proportion in which the Potash citrate should be taken. The simplest and most agreeable manner of taking it is to dissolve half a drachm of the bicarbonate of Potash in a wine-glass of water, and to add this solution to the juice of a fresh lemon previously squeezed into a tumbler. The citrate thus formed may be taken in a state of effervescence, or after, according to the taste of the patient. It is better, however, to let the greater part of the effervescence subside before taking it; as the escape of any large amount of carbonic acid in the stomach is apt to be disagreeable. This citrate thus formed may be taken night and morning, immediately on going to bed and the first thing on rising in the morning, or three times a day if needed. The juice of a fresh lemon is infinitely more agreeable, and I fancy more efficacious, than either citric acid or prepared lemon-juice; the latter, however, is preferable to the crystallised citric acid.

The use of this remedy to accomplish any certain result must be continued night and morning for some weeks. In temporary disturbance of the digestive organs, with a disposition on the part of the patient to suffer from irritation of the urinary passages from crystalline deposit of uric acid, the Potash citrate requires to be taken only for a few days; but in cases of gravel and renal calculus, it is only after a steady perseverance in the use of the salt that any remedial influence can be expected.

ON THE TREATMENT OF PUERPERAL CONVULSIONS BY CHLOROFORM AND BARNES'S DILATORS, WITH NOTES OF A CASE.

BY ALFRED WILTSHIRE, M.D., M.R.C.P. LOND.

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NOTWITHSTANDING the free employment of chloroform in the present day for various purposes, and the familiarity with its action which this argues, it is remarkable that it should be so little used for convulsive affections. And it is particularly remarkable that it should be so seldom used in puerperal convulsions, seeing that the great obstetrician who introduced chloroform specially advocates its use in this form of disorder. Enjoying an extensive acquaintance with medical men, I have been struck with the rarity with which they resort to chloroform as a means of combatting puerperal eclampsia. I am persuaded that, if they knew its value as a therapeutic agent in this disease, they would seldom or ever attempt to treat a case without it; for although obviously not of itself absolutely curative, its exhibition is attended by so many advantages that oftentimes the happy termination of a case is only to be secured by its aid.

How useful it may be in conjunction with rapid artificial dilatation, the following case, which fully illustrates the advantages to be gained by both methods of treatment, will show:—

In July last I was called by Mr. S——, a gentleman in large general practice, to see a case of puerperal convulsions with him. The patient, Mrs. K——, was a florid, robust-looking young woman, aged 20. She was pregnant for the first time, and delivery was expected in a week or two. I was given the following account of the case:—Symptoms of labour set in with

convulsion at 10 o'clock A.M., on the 25th of July. Between this time and about 5 o'clock P.M., when I saw her, the patient had fourteen fits. For some hours she was unconscious. Seeing that the patient looked robust, Mr. S—— bled her to about ʒxx, but without good effect. Chloral, calomel, and opium aperients, enemata, &c., were administered, but also without beneficial result. Under these circumstances Mr. S—— sought my assistance.

I found the patient insensible, with a dusky countenance, and breathing rapidly. Both pulse and respiration were extremely accelerated: the former being 180, the latter 80, per minute. On taking off the stockings I found both legs œdematous. On examining the head I observed a purulent discharge from the right ear. By the time I had done this a fit commenced. It began on the right side, and, when fully developed there, extended to the left, the whole body being involved in one frightful convulsion.

On examination, per vaginam, the os uteri was found to be dilated to about the size of a florin; the cervix was somewhat unyielding; the membranes were entire; head presenting; uterine contractions frequent. A very small quantity of urine (about ʒj) was withdrawn by means of a catheter. There had been a considerable quantity of water passed in the bed. Some urine subsequently obtained was found to be highly albuminous.

I recommended that chloroform should be exhibited immediately, and that the patient should be kept more or less under its influence continuously. This I advised with a view to checking the fits, which it did efficiently. Then came the question how delivery could best be expedited; that, obviously, being a point of great importance. It was clear that if dilatation of the os uteri were left to the natural efforts, a considerable time must elapse before turning, or the forceps could be resorted to. I therefore advised its rapid dilatation by means of a Barnes's air-bag. This was quickly done, and the labour was forthwith completed by the forceps, a dead child being extracted. The patient had three fits during the night after the withdrawal of the chloroform; regained consciousness next day, and then made a rapid and perfect recovery.

Apart from highly interesting considerations as to the etiology

and pathology of the foregoing case, there are two practical points in the treatment of it which are very instructive. The first is that in chloroform we have an agent capable of arresting and keeping in check the convulsions, which of themselves might kill. This, to the obstetric practitioner, is no small boon. To have it in one's power to arrest and avert the hideous convulsions, which are so terrifying to non-professional beholders, is a gain; and still more is it a gain to be able to prevent the exhaustion consequent upon so great a waste of tissue, and the damage which must accrue to the nervous centres from repeated and quickly recurring fits. Moreover, death unquestionably does sometimes occur during a convulsion. On all grounds, therefore, it is important that the fits should be stayed. This (I speak from observation) chloroform will generally enable us to accomplish; meanwhile time is gained for other methods of treatment, with which, as a rule, it need in no way interfere.

The second point is also one of great importance: it has reference to the means whereby labour can be expedited.

Nothing can be more grievous to the medical man than having to wait idly and helplessly by a patient whose safety depends upon the rapid termination of her labour,—a consummation which, however earnestly he may wish it, he may deem himself powerless to promote. Any one who is familiar with the subject, will know how often anxious hours are spent by the medical attendant in watching the progress of a labour, upon the speedy completion of which the safety of his patient and the life of her infant depends. Too often, under such circumstances, uncalled-for, not to say violent and injurious, measures are resorted to, inactivity appearing blameable.

It will, I am sure, be no small comfort to those of my professional brethren who may be placed in such a strait, to have within their reach a means of treatment as simple and harmless as that afforded by Dr. Barnes's air-bags. With them there need be no difficulty in rapidly dilating the maternal passages, and in this way the speedy termination of the labour may be secured.

If I do not enter upon the discussion of other methods of treatment, I am by no means to be understood as disparaging them. Undoubtedly some of them are useful. I only wish now to bring forward a plan of treatment which is simple and

efficient, and of the success of which I have had evidence. The two remedies chloroform and rapid artificial dilatation, either of which may be used alone, speak for themselves. I hope I have made clear their mode of action; or rather, that the objects for which they are in such cases to be used, and the advantages to be gained by their use, have been fairly stated.

Perhaps it may be well to add that dilatation of the lower segment of the gravid uterus by means of air-bags is usually almost painless; in many instances it is quite so.

OBSERVATIONS ON THE STUDY OF THERAPEUTICS.

BY CHARLES DOUGLAS F. PHILLIPS, M.D.

It is a matter of notoriety that for some years past the orthodox medical schools, both at home and abroad, have had little reliance on the power of drugs to cure disease. This has arisen mainly, in my opinion, from the want of careful scientific investigation into the effects of drugs upon disease. The attention of the medical profession has been chiefly directed to pathology and diagnosis; and in these branches such advances have been made as to justify thoughtful and observant physicians in the suspicion that a vast portion of the teaching in these subjects, up to twenty years ago, rested upon information of little worth. Perhaps a similar result might arise from a scientific study of therapeutics. It may be answered, that investigations into the action of drugs were made by our forefathers, and that no good is to be got by perpetually unsettling the basis of our knowledge by fresh inquiries. Now I do not believe that the most intelligent members of the profession will ever be content with such an answer. But as it appears still to satisfy a considerable number of persons, it may be well to state the principal reasons in favour of a renewed and very rigid inquiry into the action of drugs, even of those most commonly in use, and whose properties, it has been thought, have been most completely understood.

Prevailing ideas as to the action of the majority of drugs now in use became in some degree fixed at a time when pathology was less exact than it now is. It was then consequently much less certain than now that a given morbid condition, assumed to exist, was really present. And what is even more important, there were then no such accurate means as there are now of testing actual effects. The stethoscope, the thermometer, the sphygmograph, and the test tube enable the student now, to a

great extent, to follow and to measure the effects upon vital processes which individual remedies produce.

But in the days when most of the important medicines received their accepted titles of stimulant, sedative, cholagogue, diuretic, and so on, there was an almost entire absence of such scientific checks. And when, in addition to this, it is remembered how very frequent must have been that sort of error which would arise from the administration of the same remedy for two diseases, which, though superficially alike, improved diagnosis has shown to be perfectly distinct, I think the case against nearly all the observations on the action of medicines which were made earlier than a period commencing about twenty-five years back has been completed, and abundant *primâ facie* evidence has been adduced for the need of fresh investigations which shall be at once thorough and scientific.

In view of such investigations, and in connection with them, I am most desirous to draw attention to some very important points.

In the first place, I wish to offer a word of caution against drawing any conclusions from trials of drugs where disease is so far advanced that cure is impossible. Much of the scepticism of recent years as to the efficacy of medicines has arisen from a forgetfulness of the natural limits of the healing art.

Because a remedy is not efficacious in the last stages of a disease, it does not follow that it may not produce the most happy results in the earlier ones. We point to a liver completely disorganized by cirrhosis, or to a lung as effectually destroyed by one or other form of phthisis, to organs in fact of which but little of the original structure remains, and we ask, what remedy can cure such disease? Assuredly no remedy is known, or can be expected to be discovered, by which an organ reduced to little more than fibrous tissue can have its proper and peculiar tissue reproduced. But this does not prove that in every stage of the disease medicine is equally powerless. It is evident that to test the question fairly the remedy should have been administered in the early stages, before organic change had taken place. And yet, although this principle seems a truism, medical men constantly disregard it, and reject a drug as worthless because it fails to perform a miracle.

The next important point in these investigations is the

advisability of administering only one drug at a time. It seems strange that one should have to use any serious argument in enforcing this, but I am afraid that it is necessary. In the case of experiments on the physiological action of drugs the necessity of proceeding in this manner is fully recognized. An inquirer who, desiring to study the physiological action of drugs on the healthy body, gives several of them at the same time, is justly condemned. Surely the same rule ought to hold good in investigating the action of drugs on disease; and yet this is not the usual practice. I am far from maintaining that, after an accurate knowledge concerning the influence of certain drugs on special diseases has been obtained, it may not sometimes be useful to combine them, as it may happen that one drug may be useful in combating one part of the malady, and another or others in overcoming the rest. But until precise information has been obtained as to the action of the remedies singly, it is impossible that they can be combined with precision. It may, however, be said that the single remedies are themselves often compound; as, for instance, opium. That is true; but my reply is, that as soon as these compound drugs can be accurately resolved into their component active ingredients, it will be desirable to experiment with the greatest care on the action of each of these separately; and in the meantime surely the fact that a medicine is already and unavoidably complex is the very worst possible reason for still further complicating its action by administering other medicines with it. Not less important than the mode of experimenting with one drug at a time is the practice of comparing the effects of different doses. If, for instance, it is known that ipecacuanha given in thirty-grain doses is a vomitive,—that is to say, is a poison which acts in that manner on the stomach,—it is not right to assume that the same quantity of the drug introduced in small instalments will produce either the same or even an analogous effect. Still less is there reason to suppose that a smaller total quantity, say three grains given in grain doses at intervals, would produce effects at all resembling those produced by the larger dose. Again, certain diseased conditions strikingly modify the sensibility of the system to a drug. In dysentery, for example, thirty-grain doses of ipecacuanha can be taken without producing the slightest

nausea; indeed these often produce the best possible effect on the inflamed, and perhaps ulcerated, intestinal surface. On the other hand, in some cases of pregnancy, the system becomes so highly sensitive even to small doses that it cannot tolerate grain, or even half-grain doses of this same drug. As a matter of fact, actual experiments with ipecacuanha, varied in the manner just suggested, reveal the most remarkable differences.

I have chosen ipecacuanha as an example of the varied actions which drugs are capable of producing according to the dose given, not because it is the best example of what I mean, but because, having written a short article on this drug last year in the *Practitioner*, I can refer any one interested in the subject to that paper for a little further illustration of my argument.

Surely therapeutics is only in its infancy, when one solitary drug is capable of producing so many different effects, and yet the results attainable by different modes of administration are almost entirely unknown.

The work of re-investigation into the several properties of drugs under various conditions such as has been suggested cannot, perhaps, be properly carried out except by the junior members of the profession, who possess the double advantage of leisure and of minds free from the preconceived ideas which, in older practitioners, are the inevitable result of accumulated experience and observation, supposed by themselves to be exact. It is impossible, and it would be undesirable, to require these elder men to surrender the rough, but often serviceable knowledge which they possess, in order to recommence the study of therapeutics upon a new and scientific basis; but there is no reason why the younger men should not at once devote themselves to a scientific instead of an empirical mode of discovering the properties of the drugs they use.

In conclusion, I would make the following practical suggestions:—Firstly, let us ascertain precisely the action of single drugs on disease; secondly, let us learn the different magnitudes of dose which are appropriate to different diseases; and thirdly, let us observe how far, when combined, drugs assist or neutralise the action of one another. By such a system of investigation we may, I believe, lay an exact scientific basis for the art of prescribing.

A FATAL CASE OF TETANUS TREATED BY CALABAR BEAN.

BY CHRISTOPHER HEATH, F.R.C.S.,

Assistant Surgeon to University College Hospital.

THE following case of traumatic tetanus was treated from the first by the administration of the extract of Calabar bean, both by hypodermic injection, and, later, by the mouth. The extract was procured fresh from Messrs. Bell of Oxford Street.

For the notes of the case, and also for the very careful watching of it, I have to thank Mr. William Hammond, the Acting House Surgeon of University College Hospital.

George B——, aged 15, by trade a gas-fitter, on Sunday, September 4th, while getting over a gate, lacerated the forefinger of his left hand by a nail, the wound being about one inch and a half in length. He at once went home, had it well washed, and dressed with cold water. On Monday he again dressed it himself with strapping, after bathing it well, and went to his work as usual, but his master would not allow him to do anything. On Tuesday he came as an out-patient to the hospital, and continued to have it dressed there up to Saturday.

Saturday, September 10.—This morning the boy could not eat his breakfast; but complained of no pain, only stiffness in the lower jaw. When leaving the hospital, after coming as usual in the morning, he made no complaint, but was seen to stagger, and came back at once with his mother, and was immediately admitted into Ward I. under the care of Mr. Heath, who at once removed the forefinger, leaving the head of the metacarpal bone. The lower jaw could be opened about one inch, but the muscles at the back of the neck and the sterno-mastoids were hard and contracted. It was determined to get the patient under the

influence of Calabar bean; and a solution was used of the strength of one grain of the extract to twelve minims of water. Four minims of this were injected hypodermically every two hours, the first dose being given at 3 P.M. (one hour after the operation).

This dose was repeated at 5 P.M. and 7 P.M. (The temperature taken in the axilla at the latter hour was 98°·2 Fahr. The pulse was 100.) Every care was taken by screens and curtains to keep draughts of air and strong light from the patient. The same dose was repeated at 9 P.M. and 11 P.M., and up to this time the spasms, though frequent, were of a very mild character; and the boy said that he was in no pain, but only felt a stiffness in his back. The pupils were not contracted, but acted most freely to light.

Sunday, September 11.—At 1 A.M. the temperature in the axilla was 99° Fahr. and the pulse 96; while the attacks were still frequent, though perhaps rather diminished in force. The mouth could at this time be opened to the extent of about three-fourths of an inch, and the patient could understand what was said, and could speak without pain. The dose of Calabar bean (one-third grain of the extract) was given at 1 A.M., and repeated every two hours till 5 P.M.

Just before the injection was given at 5 A.M. the boy had a most severe spasm, when, for the first time, he grew quite livid, and could not draw his breath for about half a minute. He began to sweat most profusely, and passed his urine involuntarily. From this time till the time of his death he perspired greatly. At 9 A.M. the temperature was 99°·6 Fahr., but the pulse rose to 108. The respirations were more frequent, and the attacks seemed rather increased after 11 A.M.; but again there was a slight remission about 2 P.M. until 3, when his breathing became more laboured, and the attacks came on about every three minutes, but still they were not severe. During the day the boy passed his water in the bed three times, and his bowels acted once involuntarily.

At 6 P.M. the attack having increased rather in force and frequency, Mr. Heath determined to give one-third of a grain of the extract of Calabar bean *every hour* subcutaneously; and this was continued until 10 P.M.

At 7 P.M. the pulse was 128, the respirations 38, and the temperature in axilla 99°·8 Fahr. (the boy sweating profusely).

At 9 P.M. the pulse rose to 136. Yet at this time the mouth could be opened more widely than it had been before.

At 10.30 P.M. Mr. Heath ordered one grain of the extract to be given by the mouth every quarter of an hour in one drachm of water, and, in addition, half a grain subcutaneously every half-hour. The pupils were not in the least affected.

11 P.M.—The pulse was 130.

Sept. 12, 12.30.—The pulse was 134. Up to this time the boy was quite conscious, and could swallow and ask for what he wanted; but now, immediately after his bowels had acted freely (*not* involuntarily), the patient was seized with an attack, not very severe with regard to the contraction of the muscles generally, but which impeded respiration; and he died at 12.45, asphyxiated. There was a very slight degree of opisthotonos.

During the whole of his illness the boy had, and could swallow, milk constantly. Beef-tea he did not care for, but had some occasionally, while in his milk he had eggs beaten up, and brandy (1 oz. every six hours). This nourishment he continued till within half an hour of his death.

P. M. seventy-two hours after death.—All the internal organs healthy, but greatly congested. Right side of the heart full of liquid blood; a slight quantity also in the left side.

The veins ramifying over the brain were greatly distended, and numerous minute spots of extravasation were observed in the white and the grey matter, giving it quite a speckled appearance.

ON SENILE DELIRIUM.

BY PETER HOOD, M.D.

During the last thirty-five years I have attended several old persons who have died while labouring under Senile Delirium. This condition has usually continued for a week, at the end of which time the patient has sunk from exhaustion.

It is only comparatively recently that I have been able to detect any disease, or constitutional derangement, sufficient to explain the occurrence, frequently sudden, of this peculiar form of cerebral excitement, or to learn its true pathology.

In the various cases of Dementia Senilis that I have seen, the symptoms have assumed different characters, but they were all more or less attended with one that was uniform—namely, *excessive talking.*

Sometimes the conversation would be apparently rational for a few minutes, when the patient would begin to talk of all kinds of subjects, frequently of the most unconnected description; and this would continue hour after hour, and day after day, until death ensued; the subject being worn out by sheer exhaustion, and having, as it were, "talked himself to death."

Persons of a melancholic turn of mind have usually been oppressed with some imaginary and overwhelming grief, to the expression of which it was most painful to listen. Those, on the other hand, who possessed the sanguine temperament, displayed more cheerfulness in their conversation. I have been unable to discover, in any medical work, mention of this peculiar symptom of cerebral derangement in old persons, although it had not escaped the profound observation of Shakespeare, who, in describing the death of Falstaff, pathetically says—

> "His nose was as sharp as a pen, and
> A' *babbled of green fields.*"
>
> Henry V. Act. ii. Scene 3.

In all the early instances that I have witnessed, the delirium was looked upon as evidence of a loss of power of the brain, and of a decay of its energies; and it was thought that the mental equilibrium was in consequence destroyed. Notwithstanding, however, the inability I felt to advance any more satisfactory pathological view than this, I could not bring myself to believe that so sudden (in all the cases) and incontrovertible a manifestation of great cerebral excitement could arise independently of some powerful exciting cause; for in none of the instances was there any evidence, prior to the development of the delirium, of unusual bodily or mental debility, the age of the individuals being taken into account.

I will describe the peculiarities of three of the cases out of those which I have seen, and they will be sufficient to give a general idea of the malady. A lady, Mrs. W——, aged 81, had not felt well for some days, when suddenly she began to talk incoherently. Her face was flushed, and she complained of pain in her head. In addition to other treatment she was ordered to have mustard poultices applied to her feet, which were to remain on for twenty minutes. This order the nurse disobeyed, and left the poultices on all night, and the poor creature's feet were fearfully blistered. She made no complaint of pain on them, but would not venture to put her feet to the ground, declaring that the suffering she experienced was the act of the Almighty to prevent her from walking over the body of a child which, she said, she had murdered and buried under the carpet of her bedroom. She talked of nothing but this imaginary crime for many days, and I shall never forget the agony of her countenance. At last she died, apparently worn out by exhaustion. None of the medicines prescribed for her exercised the least effect in controlling her talking or in allaying her excitement. Twelve months previous to this lady's last illness she fell into a trance, or state of entire unconsciousness. She had been complaining for some little time previous of feelings of malaise attended with restlessness and want of sleep, when all at once she passed into a profound slumber, which continued for ten days, during which time she never moved hand or foot, and would have lain in the same posture throughout the whole period, had she not been moved by her attendants. She took no nourishment of

any kind, but lay in a state of profound coma. Her pulse beat softly and regularly, and her breathing was slow, and scarcely perceptible. Her pulse, however, became smaller and smaller, and her respirations slower; and those around her expected her death every hour. On the night of the tenth day of this long sleep, she suddenly awoke to perfect consciousness, and sat upright in her bed, and stared about her. She asked the two nurses who were with her, in a loud voice, what they meant by being in her room, and then said she felt very hungry, and desired them to get her quickly some bread and butter and a glass of ale. The nurses fled in terror to the lady's daughter, and communicated the change that had taken place in their charge. When her daughter went to her, she expressed surprise at two women being allowed to occupy her room, and was quite unconscious that she had been the cause of so much anxiety to her family.

This lady was of a singularly powerful frame, and in her earlier life was endowed with great strength, the remains of which, at the age of 80, enabled Nature to overcome, in her case, what would most probably have been attended with a fatal result in a person of more feeble organization.

There are many facts which seem to show that even aged people are sometimes allowed to die unnecessarily. Instances might be quoted of persons who were believed to be dead, but were recovered, and amongst them not the least remarkable was that of a celebrated west-country Baronet who was laid out in his coffin. His old butler volunteered to watch his master's corpse throughout the night; but, most probably, thinking the time would hang heavy on him, he invited a friend to share his vigil with him. This butler's only fault, as a servant, was his indulgence in stimulating beverages; and he did not omit, on this occasion, to have recourse to them. As the night wore on, the idea arose in the butler's mind that there would be no harm if he administered to his late master a glass of the brandy he and his companion were engaged in drinking, and he proposed it to his comrade, saying, "He has been a good master to me for many years, and has given me many a glass, and I will do the same by him before he is taken from our sight." He did as he said, and poured a glass of brandy down

his master's throat, which had the instantaneous effect of recalling him to life, and he survived for many years.

A somewhat analogous case occurred in my own practice some years ago. One evening about eight o'clock, the coachman belonging to the Dowager Lady C——, ran to my house and begged me to come to his mistress directly, for from what the servants told him, he said, she was either dying or dead. The distance was short from my house, and I was speedily there. Lady C—— was in her bedroom, sitting in a high-backed chair, and behind it stood a medical man. His first observation to me was, "Her Ladyship is gone," and indeed she presented all the appearance of death having taken place. Her face was deadly white and cold, her jaw had dropped, but her eyes were closed. I felt her pulse, and detected the faintest possible thrill beneath my finger, and I could only compare it to the tension of the finest cambric thread. Lady C——'s daughter-in-law was standing beside me, and I asked her for some brandy, which she immediately ran for and brought. I poured out a large wineglassful and poured it over the tongue, and it ran down the throat as readily as if it had been poured into a jug. The moment it had reached the stomach Lady C—— revived, gave a spasmodic gasp, opened her eyes, and said, "Bring me a basin." A basin was brought to her, and she at once vomited into it, bringing up her dinner, which had been only hashed hare. She as speedily regained perfect consciousness, and inquired of me, "what I did there at that time of the evening?" At this time Lady C—— was 80 years old, and she lived for five years afterwards.

The second case of Senile Delirium that I will describe occurred in a lady, Miss F., aged 70. She was naturally a vigorous, energetic person, and of a highly nervous temperament. Gout was hereditary in her family, and although she had never experienced what is called a "fit of the gout," she had lost the sight of her left eye from an attack of gouty inflammation. This lady was of a literary turn, and wrote both prose and poetry, but the former of these far exceeded the latter in merit. She had been subject all her life to occasional attacks of headache, connected with biliary derangement, and had not felt herself quite well for a short time before her

last illness. I was sent for early in the morning, and was told she had not had any sleep during the night, but had been talking incessantly. When I saw her she was sitting up in bed and was rambling incoherently, but everything she uttered was in rhyme, and the ingenuity she displayed in promptly finding the rhyme was very remarkable. During the whole of her illness, which lasted a week, I never once found her at fault in this respect, and she never was more at a loss to give utterance to her thoughts in rhyme than if she had expressed them in the ordinary mode of conversation. She gradually sank, apparently from exhaustion and having talked herself to death.

The treatment adopted in this case was chiefly by sedatives, with the object of allaying what was considered to be an unnatural state of cerebral excitement, which, however, as subsequent observation has taught me, was an effect and not a cause of the malady, the real exciting cause existing elsewhere than in the brain itself. I noticed, shortly after this lady's death, that her body became intensely yellow.

I have not been able to discover in the majority of persons affected with Senile Delirium that they have exhibited any undue tendency to cerebral excitement during their previous history; but the patient, Miss F., may be considered an exception to this statement. When in the middle period of life, she was occasionally subject to what she termed "presentiments." These psychological manifestations were at first ridiculed by her friends, but at last, from the successive verification of more than one of her predictions of evil, they came to regard them with less incredulity.

I will mention two instances of the many curious premonitions to which Miss F. was subject, all of which were connected with some calamity hanging over persons totally unconnected with herself. She was staying at Brighton, and, as she described herself, in the enjoyment of her ordinary health, when suddenly, without any cause known to her, the most painful feeling of apprehension of bodily danger to some one came over her. She became at once nervous and restless, uttering perpetually the observation, "I am sure something dreadful is about to happen to somebody." After this state of excitement had lasted for some hours, intelligence was conveyed to her that

a child had fallen over the cliff and had been killed. The moment Miss F. heard this she became calm, and all feeling of mental and bodily discomfort vanished. The other instance was of a very similar kind. She had had sensations of discomfort and apprehension, when, by some accident, a hay-cart was upset near her own door in London, and killed two persons in falling.

From a careful inquiry as to the state of Miss F.'s health at the time she was subject to these morbid impressions, I satisfied myself that they occurred at that period of life when a change takes place in the female constitution, and the irregularity of her circulation consequent thereon was the cause of those unusual manifestations.

In some instances, those who have been affected with Senile Delirium have shown much violence of behaviour at the onset of the attack, and have required to be temporarily restrained; but this symptom is never of long continuance, as the muscular energies of the body are soon wearied at an advanced period of life. This was the case with the gentleman whose case I shall next record, whose violence soon changed into constant restlessness, coupled with incessant talking, and whom it was most difficult to restrain in bed, as he was apparently always looking for something, he did know what, and anxious to go to some place, but he could not say where.

Mr. J——, aged 82, had been in his ordinary health and had not required any medical attendance for a considerable period, but it was observed that during the last twelve months his memory had begun to fail. He was able to eat and sleep well, and to take his usual amount of walking exercise. On awaking one morning he addressed his wife thus:—"Dear me, how kind it is of you to take your place by my side!" She asked him what he meant, and if he did not recognize her, for she was his wife.

"Oh dear no, you are not!" he rejoined; "you are labouring under a mistake; my wife (calling her by her Christian name) is an angel in heaven, and has been so for many years." Mr. J—— had been married to this lady more than fifty years. When I visited Mr. J—— I could not discover any abnormal symptom indicative of special treatment beyond the necessity there appeared to soothe and calm the unnatural excitement he was suffering from. He was, as I have stated, intolerant of restraint at the

beginning of his seizure, but, beyond the difficulty of keeping him in bed, this soon subsided.

As I had never found in all the previous cases of Senile Delirium (including the two treated of) that the medicines administered had been of any service in controlling this symptom, I requested the advice of the late Dr. Todd. When Dr. Todd saw this gentleman with me, he informed me that he had never seen an instance of recovery when such symptoms were present in old persons. The treatment employed consisted of stimulants and sedatives. The former only seemed to do mischief, and the latter exercised no control over the continuous excitement. He never slept either night or day, and died from exhaustion at the end of a week. The unfavourable termination of this case, like that of the others, produced in my mind a feeling of dissatisfaction, and at the same time a conviction that I had failed to discover the real source from whence this peculiar delirium originated; and on looking back at the former instances of persons so affected, these impressions were strengthened.

My attention at this period being devoted to disease affecting the liver, and the maladies consequent upon derangement of the functions of that organ, it occurred to me to ask whether the cerebral symptoms of Senile Delirium could be traceable to any such derangement. I resolved that, whenever I again witnessed a case of this description, I would pay more attention to any defects discoverable in this important gland. I had not long to wait before an opportunity of testing the value of this idea presented itself, and I confess to having felt some anxiety as to the result. The case that I was called to was a gentleman, Mr. S——, aged 70, who, six years previously, was affected with paralysis of his right side, unattended with loss of consciousness. From that time he had been unable to walk without assistance, and his right hand remained very feeble. He was blind in both eyes, and was very deaf. I was told that he had had no sleep on the previous Saturday and Sunday nights. On the Sunday he became very restless and began to ramble in his talk, and discoursed incessantly of persons long passed away as if they were still living, and his family were frequently at a loss with regard to many of those to whom he referred. He continued to talk perpetually throughout the whole of Sunday and during the

night up to the Monday morning, when I saw him at ten o'clock. He failed to recognize me when I visited him, and upon my telling him I would order him some medicine to take, he said, "Had you not better get it made up at Newcastle?" he living in London. His hearing had become quite perfect, so that he heard the gentlest tones of the voice. He had not taken any nourishment for two days. His pulse was small and quiet; his tongue was dryish, and had a streak of brown fur in the centre. On asking if he felt any pain in his head, he said "Yes," and placed his left hand on the top of it. The scalp felt hotter than natural. The nurse assured me that her master was quite regular in his bowels, three days ago having taken a pill containing a small quantity of croton oil which had acted freely, and that he had taken a dose of castor-oil the day before (Sunday), which had acted well.

I next proceeded to make an examination of his abdomen. He was lying on his back, and, on percussing his right side, he observed, "When you 'pop' me there, I feel pain." His liver was three inches below his ribs. His abdomen was much distended with flatus, and, notwithstanding the nurse's report, there was undoubtedly considerable fæcal accumulation in the large intestine. Thus far the case seemed clear enough as to the treatment required, but it remained to be proved whether such treatment would be effectual in removing the delirium.

I ordered two pills containing two grains of calomel, two of extract of hyoscyamus, and five of the compound extract of colocynth; and a warm aperient draught to be taken four hours afterwards. He was also to have a tablespoonful of brandy with two of water every six hours, and to be fed on beef-tea.

When I saw this gentleman again at 4 P.M., I learned that he had taken his pills at eleven o'clock and continued talking until two, when he fell asleep, and he was so when I saw him, but I would not allow him to be disturbed.

In the evening I had a note from his daughter, stating that soon after I left the pills had acted freely, and her father "was quite himself again," and wishing to know whether he was to take his draught, to which I replied that it had better not be given.

On the following morning I found that the patient had had a good night, and he appeared in his ordinary health. He had lost his acuteness of hearing, and his usual deafness had re-

turned. All excitement had disappeared, and he lay tranquilly on his right side in bed. The pain and heat of the head, and the tenderness in the hypogastric region, were no longer complained of.

The pills had brought away a considerable amount of bile. In this instance it may be assumed that the small dose of calomel acted as an indirect sedative by stimulating the gall-bladder to part with its contents; and that upon the discharge of the pent-up bile, the retention of which had been the cause of inducing a morbid irritation which was reflected upon the brain, relief was afforded to the cerebral symptoms.

The result of this treatment served to explain why the sedatives, morphia, opium, &c., which had been freely employed in my former cases, with the hope that they would exercise a soothing and calming influence, had not only failed in their effects, but had appeared to do more harm than good, and to increase rather than allay the excitement.

This pathological view seemed to give a solution of a hitherto obscure problem, and I shortly had an opportunity of again observing the effects of a similar mode of treatment in the same gentleman.

Three weeks from his first attack Mr. S—— again became the subject of similar symptoms. He had, to all outward appearance, returned to his usual state of health; he slept well, and ate heartily, in fact too much so, as he had been allowed to take more animal food than he ought, owing to the impression entertained by his nurse and family that he required it to subdue the debility which remained after his illness. He had eaten animal food three times a day.

On a Saturday evening his son-in-law, who contemplated a journey to Spain, conversed with him on the unsettled state of the country, and the prospect of a war between it and our own. He at once became much excited, and declared he would act as a volunteer, firmly believing that the Spaniards had invaded England.

He passed a sleepless night, and I saw him on the Sunday morning, when I was told that he had been talking incessantly through the night, and he was still engaged in discussing Spanish affairs. His tongue was very foul, his breath offensive, his pulse

quick, and he complained of feeling sick. The nurse had given him two of the pills he took in his former attack, and they had acted freely, but they had neither produced sleep nor tranquillity of mind.

I ordered one grain of calomel, with two of extract of henbane, to be taken every six hours, and to be followed one hour after each pill by a dose of cordial effervescing medicine, and by a warm aperient draught on the next morning; the diet to be confined to beef-tea, with a tablespoonful of brandy three times a day. On the Monday morning all symptoms of excitement had passed away; he talked calmly and collectedly, and never once alluded to the subject of Spain. His draught had operated freely, and he had again parted with a large quantity of bile. I enjoined greater caution as to diet, and restricted his animal food to once a day.

Mr. S—— remained well for nearly a year from this last attack of Senile Delirium, during which time he appeared better than he had been for some years; his hearing was quicker, and he manifested a more lively interest in persons and things around him.

On the 20th November, 1867, I was again summoned to him, and learned that he had been perpetually talking since the morning of the 18th. On examining him I again discovered dulness and enlargement of the right hypochondrium. He did not recognize me. His tongue was foul. He had two pills on the night of the 18th, like those before described, which were followed on the morning of the 19th by a warm aperient draught, which medicine had acted freely. He had also begun to take on the 19th the one-grain calomel pills every six hours, followed by a dose of effervescing medicine one hour after each pill. This treatment was continued until the 20th. When I saw him I ordered the aperient draught to be repeated, and directed that, when it had acted, he was to resume his one-grain calomel pills; and if the talking had not ceased, to take another draught on the morning of the 21st. When I saw him on that day, he had become tranquil. His nurse informed me that during the whole of the preceding day he was restless and wandering in his talk, and that he would get out of bed and be dressed, and insisted on being wheeled about the dining-room.

He was at last persuaded to take some nourishment, which he had previously refused. This consisted of some brandy and arrowroot, which appeared to exercise a most soothing influence over him, for after taking it he fell asleep at half-past ten at night, and did not wake until seven o'clock in the morning. At the onset of this attack he complained of being disturbed by the sound of falling hail, which appeared to oppress him very much.

I have thus given a short statement of the treatment employed in *three* of the attacks of Senile Delirium, from which this patient suffered. The first occurred in 1866, but since that time up to the present year (1870) I have attended him in several others, and I have always found that he was amenable to the treatment described, and that, when it was requisite to administer the calomel in one-grain doses, he rarely required more than three of them. He spends the greater part of his time in bed, but in fine weather occasionally takes a drive in a close carriage. His general health is thought to be much better than it was some years ago.

I have watched this case with much interest, and have every reason to be satisfied with the proof it has afforded of the intimate relationship that exists between hepatic derangement and cerebral excitement. Since my attendance upon Mr. S—— I have met with three other cases in old persons who have manifested symptoms of Senile Delirium, and in all of them I have succeeded in controlling the disease by the adoption of a similar mode of treatment to that employed in Mr. S——'s case.

These cases bear so great a resemblance to each other that I will mention only one.

I was requested to see a lady, aged 75, who had been operated on for cataract a few days before. The operation proved most satisfactory, but she suddenly began to talk incoherently, refused her food, and could not sleep; she was restless, and with difficulty controlled. On inquiring as to the state of her health, the nurse assured me that the bowels had been relieved daily. On examining her abdomen it felt hard and rather tense, and I was satisfied that an accumulation of fæces existed in the cæcum and colon.

The pulse was seventy-six, and soft on pressure. This lady had been subject to attacks of dyspepsia from her childhood. Her tongue had a brown streak down the centre. I ordered her

two pills, containing 2 grains of calomel, with 5 of compound extract of colocynth, and 2 of extract of hyoscyamus, to be followed by a warm aperient draught in six hours' time. This medicine operated very effectually, bringing away an enormous amount of most offensive fæcal matter, to the immediate relief of all her symptoms, and when I saw her on the next day she had quite regained her usual tranquillity of manner. In this instance also a large defluxion of bile occurred.

I shall conclude this paper by a few words on the relation, which the facts narrated seem to suggest, between irritation in distant organs and delirium as a reflex effect of it. It would almost appear that this is a characteristic of the *senile* brain—that distant irritation (as from a gall-bladder filled with irritant bile, or a colon loaded with fæces) produces a greater degree of cerebral perturbation than would follow at earlier periods of life. This would be important, if confirmed by further observations. An exaggerated fear of depressing the feeble nervous system of old persons may, perhaps, not unfrequently lead us to withhold the salutary emetic or cathartic that would deliver the brain from the oppression of a reflex excitement, which otherwise must soon wear out its small remaining power.

SURGICAL NOTES FROM THE WAR.

BY H. J. NORTON, F.R.C.S.

DURING the present war, in two large battles alone, it is said that upwards of seventy thousand men have been killed and wounded. No one can tell precisely where a battle will take place, for the position and course of the armies are unknown. No administration can be prepared to meet the requirements of such a carnage, for everything is required momentarily, and railway communication is usually cut off. The result is, that the surgery of a war has to be carried on for a long time after a battle under the greatest difficulties.

It is here unnecessary to enter into the subject of hospitals. Every place in which a man can be protected from the weather is made use of as such, space not being taken into consideration. Any material softer than the ground itself, such as hay, straw, leaves, sacks, &c., forms the beds of the patients. Splints and all surgical appliances, material for poultices, hot water, &c., are wanting. Food and necessaries are insufficient, and often for many hours not forthcoming at all. Medicines and disinfectants are scarcely thought of.

Surgeons and dressers are for some days sadly too few in number, but after five or six days they are, on the contrary, too many.

In our English ambulance at Briey, near Metz, in which Mr. Sewill and Mr. Lyman were associated with me, we had a great number of things which but few other ambulances possessed. For splints we obtained a quantity of sheet tin, and this we could cut into any size or shape. The curves or joints we strengthened by two or three layers of the metal. The following is a good example of a useful apparatus made with this material. A private in a French line regiment had been wounded by a bullet on the 16th August. The ball had passed obliquely through the lower four inches of the tibia, through the ankle

joint and the astragalus, making its exit below the external malleolus. The patient had refused to have the limb amputated; so it had been put in a plaster-of-Paris apparatus immediately after the battle: but when I first saw him the œdema was so great and the pain so excessive that it was necessary at once to remove it. This case was not adapted for a plaster-of-Paris splint, for, in the first place, the œdema extended over the whole foot and also up the leg; and, in the second place, the extent of injury was so great that the wounds could not be exposed sufficiently without a great reduction in the strength of the appliance. We therefore fitted a back splint of tin to the calf of the leg, bending it upwards from the heel along the sole of the foot. The plate was then bent laterally, so as to fit the roundness of the calf, and by that means also the strength of the splint was considerably increased. The strength of the heel-bend was now totally insufficient to support the foot, and to obviate this another piece of tin was cut, about four inches broad and twice as long as the breadth of the splint. This piece was now bent at right angles along the middle, from end to end, and then cut at each end so as to produce four tails. The piece was next applied around the heel bend of the splint in such a manner that two tails could be flattened over the foot-piece and the other two over the leg-piece. The pieces were then firmly applied to each other by means of a hammer, and the strength was now as great as that of a piece of sheet-iron—all that could be desired. The whole of the splint was next padded with cotton-wool in the usual manner and covered with oil-silk. Beneath the wounds was laid a piece of waterproof sheeting, which could be readily removed, and by which the discharge and water from the irrigation was directed into a flat vessel at the side. The apparatus was fixed to the leg by two short bandages, one around the foot, and the other around the leg immediately below the knee.

This patient was unable to bear the weight of the bedclothes, and the difficulty was to obtain a cradle. This difficulty was soon overcome by Mr. Sewill, who had seen an old rush-bottom chair in the stable. He removed the rushes, and sawed off the parts which were inconvenient, and by that means made a really excellent substitute for a bed cradle, to which we were also able to swing the limb.

Other cases required cradles; so a carpenter was found who made rough frameworks sufficient for our purpose. In one case, in which there were several wounds, a cradle was made, and to the sides were attached several broad bandages, which passed beneath, and suspended the limb. The limb was not in a splint or case, and so one bandage could be disconnected at a time, and each wound dressed separately. Many compound fractures in which there was not extensive swelling were put up in plaster-of-Paris splints; not the so-called starch bandage used in England, but simple plaster-of-Paris. A linen bandage was first applied to the limb, and then a thick flannel bandage, and external to this the plaster was applied in sufficient thickness. Before the plaster was completely set, a square aperture was cut to correspond to each wound; and as the bandage was closely applied, the orifice of the wound, and a distance of the skin around, pressed somewhat into the space cut in the plaster. By this means irrigation could be applied to any extent, and none of the water escaped between the limb and its case.

Poultices could not be procured for a considerable time; so they had to be dispensed with. Hot water could not be obtained in many places, that is to say, not in any quantity; so it became an almost general rule to do all the dressings with cold water. The patients did not complain much of this treatment. It was very evident the application of cold water was painful.

In Briey we were better off than in most places, and I was shortly able to obtain a sufficient supply of warm water for all my cases. Irrigation was made use of largely, though not in the form of continuous dropping. In gunshot wounds a large quantity of tepid water, mixed with carbolic acid, was passed entirely through the wound by means of a fine india-rubber tube. This was done twice, three or four times a day, according to requirement, so that no pus could collect, and the wound was kept thoroughly cleansed. In compound fractures from gunshot injuries this treatment was markedly beneficial; the wounds were kept open, the dead pieces of bone were readily removed, and granulation upon the living bone was promoted.

With regard to adhesive plaster, the number of cases in which it was required were remarkably few, the use of that article being limited to one or two sabre cuts, in which it was employed to support a mass of divided structures.

Reviews.

Étude sur les Névralgies Réflexes symptomatiques de l'Orchi-épididymite blennorrhagique. Par CHARLES MAURIAC, Médecin de l'Hôpital du Midi. Paris: F. Savy. Price 2*s.* 6*d.*

IN the dearth of strictly therapeutical works which at present prevails (and for which the interruption of free communication with the Continent is to a great extent answerable), our readers may not be unwilling to be furnished with some notice of a treatise that is mainly clinical and pathological in character, but has nevertheless an important bearing on treatment. Certainly, we are much mistaken if the majority of English medical men will not find the facts contained in the work before us to a large extent new; and, unless we have much overrated the care and trustworthiness with which the observations were made, they must give rise to serious reconsideration of many of our current ideas respecting the genesis of the reflex neuralgias. That the testicle is itself liable to *neuralgias* of a very painful and intractable order was known to every one; that the *inflammatory* affections of that organ are in themselves extremely painful, and for the time very disturbing to the organism generally, was also a familiar fact; but that blennorrhagic inflammations are capable of exciting such profound general disturbances, among which reflex neuralgias of the most varied and often distant parts of the body occupy a remarkable position, is certainly a fact that we should not have been inclined to admit. This fact, however, Mauriac demonstrates by arguments that it is not easy to refute. We must preface our notice of his work by the remark that the author has enjoyed rare opportunities of studying the complications and sequelæ of blennorrhagia on an enormous scale.

To give an idea of the importance of these reflex neuralgias, we may state that on a first analysis (of 200 cases of blennorrhagic orchitis) M. Mauriac had concluded that it occurred no less often than once in every fifteen cases; larger experience has since, however, induced him somewhat to reduce this estimate. We shall now proceed to state the general conclusions with which the author sums up his work.

1. There exist, in blennorrhagic orchi-epididymitis, two kinds of pains: (*a*) *local and direct* pain, belonging to the inflammatory process in the epididymis and testicle; (*b*) *reflex, sympathetic*, or *remote* pains, which constitute the reflex neuralgias. 2. Reflex neuralgic pains are heavy and lancinating, continuous and paroxysmal; they occur in irregularly returning attacks. So far from being increased by touch and pressure (like inflammatory pains), they are for the most part relieved by pressure, and are spontaneously produced. They change their situation, and occupy successively or simultaneously, not only different portions of the same nerve, but also one or several nervous branches belonging to the same or different plexuses. 3. They do not present, in their course, the regularity of the organic processes from which they originated; it seems that they come to a sort of autonomy, in which they acquire the privilege of manifesting themselves after a manner peculiar to them—namely, with an irregularity of behaviour which defies calculation. 4. The morbid impression which gives rise to these reflex neuralgias starts from the testicle and impinges on the spinal cord. 5. This *incident* impression may be perceived or unperceived at the point from which it starts. Arrived at the nervous centre it modifies pathologically the functions of the nervous cells. There result from this, in the course of the sensitive nerves in communication with the nervous cells, *painful sensations* produced in virtue of the law of *excentricity of sensory phenomena*, or *peripherism of sensations*. 6. The laws of *motory* reflexion, formulated by Pflüger, are not rigorously applicable to *sensory* reflexion. Thus the painful irradiation reflected by the nervous centres may be produced below the point of incidence of the initial morbid impression; in general it is diffused, without fixed channel, and impatient of all laws. Here there is no centre (like the bulb for reflex movements), towards which excitements of sensation pass from below upwards, and from before backwards. The law of *generalisation of reflex movements* does not apply to the sensory power. This power, spread in a diffused manner throughout the grey substance of the nervous centres, does not appear to concentrate itself in a circumscribed point. 7. In orchi-epididymitis with reflex neuralgia, the reflexion may pass to the *viscera* by the channel of the cord or the ganglia of the great sympathetic. 8. The intensity of the reflex pain is not proportionate to the intensity of the local inflammation. The latter is often slight, or has completely vanished, when horrible reflex neuralgia manifests itself at a more or less remote point. 9. The radiating pains are less intense when the reflexion falls on nerves whose origin is mostly from that of the nerves distributed to the affected testicle. 10. Muscular contraction frequently aggravates the reflex pains; but the latter,

in their turn, sometimes excited reflex and involuntary contractions. To this abnormal conflict between the sensory nerves (*virtually* painful) and the motor nerves are to be referred the convulsive shocks, the cramps, the contractions, and the muscular anæsthesias observed in some cases of orchi-epididymitis remarkable for the severity of the reflex neuralgia. 11. When the reflex irradiation excited by a morbid impression starting from the testicle falls upon the *plexus of the great sympathetic*, it may produce phenomena much more complex than mere pain, such as abnormal peristaltic and anti-peristaltic movements of the intestinal canal, hyperæmias of the stomach and liver, fulness or contraction of the general circulation, and consequent modifications of calorification, &c. &c. 12. Reflex neuralgias symptomatic of orchi-epididymitis from blennorrhagia are usually unilateral (same side as diseased testicle); but sometimes are bilateral, or girdling, and constituted by a *double* lumbo-abdominal neuralgia. 13. *Rachialgia* is the most frequent of the reflex pains from orchi-epididymitis; it has two foci, a superior or *renal*, an inferior or *sacro-sciatic*. 14. Finally comes reflex *lumbo-abdominal* neuralgia, with its three foci, *inferior lumbar*, *hypogastric*, and *inguinal*. 15. Sympathetic pains which are propagated down the *lower limb* of the affected side are divided into two groups; an anterior or *crural*, a posterior or *sciatic*. 16. In some cases the pain invades the thoracic walls, and manifests itself there, sometimes as vague suffering, more frequently in the form of a fixed focus and of irradiations which follow the course of the intercostal nerves. 17. *Visceralgic* pains symptomatic of blennorrhagic orchi-epididymitis have three foci; the *superior rachialgic* or *renal*, the *deep hypogastric*, and the *epigastric*. 18. In the pathogeny of reflex neuralgias from orchitis, the first part is played by the testicular inflammation; the second by that of the tunica vaginalis; the third by the inflammation of the spermatic cord. 19. Neuralgia of the testicle ("irritable testis") is for the most part nothing but a localised inflammation of the testicular apparatus, become chronic, and not observed till, at some moment, it causes reflex neuralgia. 20. Inflammation of the testicle or of its appendages possesses, to a remarkable degree, the property of *diminishing the red globules of the blood*. The liability of patients to become anæmic under this influence varies according to their ages; the younger they are the greater it is.

Such are the results of M. Mauriac's very complete and careful inquiries into his subject; and it must strike every one, that if they are correct, inflammatory and sub-inflammatory affections of the testis may probably be regarded as much more potent causes of neuralgias, and indeed of neurotic conditions generally, than had been supposed. Two things in particular impress our

mind, though M. Mauriac does not, so far as we have noticed, draw the same inference from them that we are inclined to draw. On the one hand the powerful influence which blennorrhagic orchitis appears to exert both upon the spinal nervous system, and also (perhaps secondarily to the latter) upon the development of blood corpuscles, makes one reflect on the probability that other and more chronic forms of inflammation of the testis and its appendages may produce effects of a very similar kind. Again, if M. Mauriac is right in believing that the form of neuralgia known as irritable testis is really a reflex effect of subacute inflammation of the organ, we are led to think of the probability that local irritation (especially that of masturbation) may, by producing subacute inflammation (and often varicose veins), lay the foundation of anæmic and neurotic conditions which constantly pass without suspicion of this source of origin. Until the present time it has seemed more probable, on the whole, that the evil effects of local irritation were the direct result of the expenditure of nerve-force joined with the depressing moral influences of a degrading practice. But if subacute inflammation of the testis or epididymis be a necessary step in the train of evils, it at once accounts for that immunity from the evil effects of the vice which it cannot be doubted that many persons possess; and on the other hand (as the inflammatory affection is apt to pass unnoticed), it suggests that a sufficient search may frequently not be made into the causes of anæmic neuralgia, especially when the pain is manifested in quite a distant part of the body. These, and other interesting questions, are suggested by M. Mauriac's important treatise, which we strongly recommend to our readers' attention. We must conclude by noticing the few words which the author devotes to the question of treatment. He places much importance, in the early stage, to relieving the testicle by puncture of the tunica vaginalis; but it would seem to us that the method of Diday—applying ice—which we have already noticed in this Journal, and which M. Mauriac speaks of only at second-hand, is likely to be more useful, locally, than anything else. For the reflex neuralgia, when it becomes more "detached"—to use the author's phrase—from its origin, the usual localised narcotic applications and the usual revulsives are recommended. We are surprised that the author has not dwelt on the importance of joining tonic medication with these other remedies; but no doubt his mind is principally, and not unnaturally, occupied with the necessity of removing the particular set of causes for the neuralgia which he has done so much to demonstrate.

Atlas of Ophthalmoscopy, representing the normal and pathological Conditions of the Fundus Oculi, as seen with the Ophthalmoscope. Composed of Twelve Chromo-lithographic Plates, containing 59 *Figures drawn from nature, and accompanied by an explanatory text.* By Dr. R. Liebreich. Second Edition, enlarged and revised. London: Churchills, 1870.

The superb collection of drawings made with the ophthalmoscope, which Dr. Liebreich published in 1863, with a descriptive text in French and German, became at once a standard work of reference for all who were engaged in the study and interpretation of ophthalmoscopic appearances. Himself associated with the invention from its earliest days, the first to apply it to the investigation of morbid conditions, and the contriver of those forms of the instrument, both fixed and portable, which still hold their ground as the most useful and convenient, Dr. Leibreich was treading upon firm ground in its use; at a time when many observers were still feeling their way to conclusions through a labyrinth of doubts. By the judicious combination of the direct and indirect methods of examination, he was able to obtain an extended view of the whole background of the eye, and then to study with care, and under the best conditions of illumination and enlargement, the minutest details of every portion of the surface. By blending in a single drawing the results of these two methods, he obtained portraits at once accurate in minutiæ and large in extent; and his artistic skill has enabled him to appreciate and to represent the finest shades of difference both in colour and in form. A selection from these pictures, even when inadequately reproduced by chromo-lithography, formed a collection not only unapproached by any other figures of the kind, but probably unapproachable; since they were the result of the assiduous use of such a combination of gifts and opportunities as can seldom be expected to recur. After the lapse of seven years, and in the preparation of a second edition, Dr. Liebreich has found little to alter, although he has increased the total number of figures from 57 to 59, and has omitted, to make room for others, the less instructive drawings of some varieties of disease. Among the additions, we may note extremely fine plates of hæmorrhagic retinitis, choroiditis disseminata, and optic neuritis; and also that the series of figures representing inflammation and atrophy of the optic disk has been rendered fuller and more complete, and that special attention is drawn to the differences between the atrophy that is, or that is not, consecutive to inflammatory processes. We have here a link between the work of the ophthalmic surgeon and that of the general practitioner; for it is through the investigation of the optic nerve changes consequent on meningitis, encephalic tumours, or specific disease, that we

may hope eventually to throw light upon many obscure problems in connection with the pathology of the nervous centres. For all who are pursuing such investigations, Dr. Liebreich's figures will furnish standards of comparison of the highest value.

The text of the new edition is more complete than that of the former; and the English version, which is translated from the original by M. Swanzy, is throughout clear and accurate, and is a fitting pendant to the plates. The whole, indeed, forms a text-book of ophthalmoscopy adapted to the wants of all who have once mastered the manipulation of the instrument; and will be found to contain a key to the comprehension and correct description of nearly all the multiform appearances that it reveals.

Clinic of the Month.

Iodine as a Topical Application to Wounds.—Dr. Stirton states that, owing to the failure of other methods of treatment, he was compelled to try the effects of an injection of strong tincture of iodine in a case of dropsy of the knee-joint, with a good and apparently permanent result. About the same time there came under his notice a case of fistula in ano, which had frequently recurred after division by the knife; and in which also, after the general condition had been improved as far as possible, the application of iodine was successfully made after it had once more been freely laid open. He adopted the same means in the case of a scrofulous abscess in the groin; a solution of two grains to the ounce of water, with the addition of a little iodide of potassium, being injected every twelve hours for three days, when rapid contraction and healing occurred. Success in this case rendered him bold, and he now began to use iodine as a topical application to wounds of all sorts, including incised, and much in the same way as carbolic acid is used, the first instance being after excision of a small tumour, and here also rapid healing by the first intention ensued. The therapeutical powers it possesses, he thinks, are due, first, to its power of determining just that degree of congestion of the surface which is attended with the production of such a degree of plastic lymph best suited for adhesion of parts in contact; secondly, to its well-known destructive effect on all living germs; thirdly, to its being one of the elementary bodies, and therefore not liable by contact to enter into any unknown, and it may be deleterious, combination with the living tissues; and lastly, to its wonderful power of separating dead or dying tissue from the living and active. (See *Medical Times and Gazette*, Sept. 3, 1870.)

Traumatic Tetanus treated by Belladonna, Quinine, and Purgatives: Recovery.—Dr. Rose records the case of a boy aged 15, who about the 21st of March scratched his leg rather deeply whilst at play, with a nail. The wound was dressed with wet lint, and seemed to be doing so well that no notice was taken of it after the first two or three days. It then,

however, became painful; and on the 29th of March he complained of feeling very unwell, and of a stiffness about the angles of the jaws. The wound appeared inflamed, and was again dressed with wet lint, and he was kept quiet. On the 31st he was much worse; the wound, which was on the outer side of the right leg, about six inches above the malleolus, being very deep, the skin around inflamed, and the sore discharging a thin, sanguineous, and somewhat offensive fluid. The application of nitrate of silver with brisk purging was at once adopted; and a draught containing tincture of belladonna 20 minims, tincture of quinia 1 drachm, sulphate of quinia 1 grain, ordered to be taken every four hours. At the same time a liniment, containing extract of belladonna 1 ounce, strong solution of ammonia half a drachm, was directed to be rubbed into the back three times a day. On the same night the spasms were severe, and opisthotonos occurred; but on the following day he was better, and had been able to swallow some beef-tea and wine. On the 2nd of April the symptoms were about the same; the wound was dressed with carbolic acid lotion. On the 3rd he was worse, and free purgation was again resorted to, and turpentine stupes applied to the abdomen, with manifest advantage. From this period he continued to improve, and in a week or two was quite well. (See *Lancet*, Sept. 24, 1870.)

Treatment of Sunstroke by Venesection.—Mr. Salter, of Tolleshunt D'Arcy, records an interesting case of a lad, aged 16, who on one of the hottest days of July 1869 was suddenly affected with sunstroke. Half an hour after the seizure he was lying on the ground insensible, wriggling in convulsions like an eel. The muscles of the trunk, neck, and legs were rigid, the countenance suffused, the eye directed backwards and fixed, the breathing snatchy and stertorous. The pupils were much contracted, the conjunctivæ injected, the teeth firmly clenched together. The temperature of the body was abnormally high. The heart beat tumultuously, and the throbbing of the carotids was very energetic. At the wrist the character of the pulse was small, quick, sharp, and wiry; there was a lack of volume, not of propelling force. After watching him carefully for some time, during which his symptoms increased in severity, Mr. Salter determined to bleed him, and several ounces of blood were taken without delay. The effect was most striking. The convulsions were quickly relieved, and gradually ceased as the blood continued to flow; the pulse became slower and fuller, the breathing less laboured, and the venous engorgement of the face subsided, the pupils relaxed a little, and by the time the arm had been bound up, he lay in a heavy, oppressed sleep. He was now put to bed. Cold applications were made to the head, and

warmth offered to the feet. A dose of castor-oil, with small but frequent doses of brandy and beef-tea, speedily led to recovery, and in two days he went home. (See *Medical Times and Gazette*, August 27, 1870.)

Treatment of Hospital Gangrene.—Dr. Smart, who had considerable experience in the treatment of this disease during the period of active operations in the Canton River from 1857 to 1859, observes that the surgeon's duties after a battle arouse in him the same exciting tone of mind as prevails among his combatant brethren; though no circumstance is so depressing to him as when in his ministrations he dreads, on removing dressings, in cases that have borne operations well, where he has hoped for success, to find the indications of a fearful malady that may destroy his patient in a day or two. In such calamity promptness of action is demanded, even beyond that called for in treating the wounded primarily; but he may rest assured that by promptness in the unflinching application of approved means he will succeed in enabling his patients to stem the adverse current.

During the years above mentioned, the powerful agents now possessed by the surgeon in carbolic acid and the permanganates were unknown. Later experience inclines Dr. Smart to depend on the former as a preventive, and on the latter as a curative agent. The surgeon may still, however, be similarly placed without having those means at hand, and then he may find that much can be done with other means. On the occasion referred to, the general principles adopted were—1st, to improve and maintain ventilation as thoroughly as possible; 2nd, to disinfect the atmosphere with chloride of lime in vessels placed under the beds, or with chloride of zinc solution on wetted cloths hung up in the wards; 3rd, to support the strength of the wounded by the best diet that could be obtained for them; 4th, to obviate contagion by discarding sponges, tow, &c., in dressing the wounds, for which a clean earthen vessel containing water, a caoutchouc bottle, a pail to receive the washings and foul dressings, and a glass syringe for the medicated lotions, are the simplest and the best appliances; 5th, to give opium and dietetic stimulants freely to the infected; 6th, as it is a local malady, every germ of the disease must be destroyed, together with all the tissues that are affected by it, and a line of demarcation formed beyond those tissues; and therefore as a rule, wherever there are signs of this terrible *pourriture d'hôpital*, the surgeon must not hesitate to lay wounds open again, and to apply strong fluid caustics (such as chloride of zinc) boldly, not refraining from injecting them into the surrounding tissues, and to have recourse to the actual cautery when the surfaces involved are large and widely

or deeply affected, or where fluid caustics have failed. Dr. Smart records two cases in which such treatment was pursued with the best results. (See *Lancet*, October 1, 1870.)

On the Treatment of old-standing Luxations of the Humerus.—In a clinical lecture in which Professor Richet took up this subject, *à-propos* of a case of sub-coracoid luxation six and a half months old, he remarked that their treatment demands patience as well as prudence. The patient had been thrown from his horse, and the usual symptoms were present. He could move the arm forwards and backwards, but he was unable to raise it, and desired that an attempt should be made to reduce. The first points to be attended to would be the possible contra-indications, and these might arise from—1st, position of the head; 2nd, disease of the glenoid cavity; 3rd, the presence of osseous stalactites; 4th, immobility; 5th, atrophy of the muscles; 6th, injury to nerves; 7th, fatty degeneration of the arteries. But none of these were present, and the only contra-indication consequently was the date of the injury. Professor Richet then referred to the numerous successful cases that had occurred in the hands of other surgeons, even after the expiration of longer periods than this, and that he therefore intended to attempt its reduction; but before doing so he wished to point out the accidents that might arise, and that had been known to occur from the employment of too great or misdirected force:—1st, emphysema of the axilla; 2nd, congestion of the brain and exhaustion; 3rd, laceration of the skin of the arm and axilla; 4th, œdema and phlegmon of the arm; 5th, fracture of the neck of the humerus; 6th, suppuration in the axilla; 7th, lesions of the veins and arteries; 8th, tearing away of the whole arm; 9th, rupture of the median nerve at its origin in the spinal cord; and 10th, tetanus. In the case under consideration, the patient was put under the influence of chloroform and traction to the extent of 300lbs. exerted, with manipulation, but only partial reduction was effected. (See *Medical Times and Gazette*, Sept. 24, 1870.)

Treatment of Housemaid's Knee.—Mr. Thompson, of Westerham, gives a series of cases showing the beneficial results of the application of the plaster of ammoniacum and mercury to cases of inflamed bursa patella, which he thinks is not so generally known and accepted as it ought to be. The following is one of the cases reported:—On July 18, 1868, a housemaid awoke in the night with acute pain at the knee. I found great pain, heat, and tenderness over the patella. The bursa was much swollen. She was feverish and ill, and was ordered to remain in bed, and keep the knee covered with spirit lotion. On the 23rd the acute symptoms had subsided. The bursa was very

distended with fluid. The plaster was applied. On the 30th the swelling was entirely absorbed, and she was at work again. (See *British Medical Journal.*)

Therapeutical Properties of Iodine.—Dr. Whitelaw, of Kirkintilloch, after endorsing Dr. Richardson's statements to the effect that the inhalation of iodine will correct the odour of fœtid breath, and destroy almost at once the disagreeable odours arising from the eating of onions and from smoking tobacco, and also that, as suggested by Dr. Wynn Williams, it constitutes a good application to fœtid and indolent sores, observes that in his own practice the internal use of small doses of iodine with iodide of potassium in bitter infusion is a reliable remedy in cases of syphilis, and as a gargle for sore throat; in the same cases tincture of iodine, and solution of chlorinated soda in water, are of marked benefit. The compound iodine ointment rubbed into the shin-bones of syphilitics banishes the usual nocturnal pain felt in the legs. The same ointment four days after a fly blister is very useful when applied in cases of chronic pleurisy. In the dysmenorrhœa of corpulent women, iodine inwardly is also useful. Like Prof. Abbott, he has found it useful in periodontitis applied in the following way:—℞ Tinct. iodinii and tinct. rad. aconiti, equal quantities; apply to gums with a brush once or twice a day, three drops at a time. Allow to dry on gums. In combination with any anodyne liniment, iodine is a beneficial outward application in cases of chronic strumous peritonitis. Dr. Whitelaw further states that while he has cured two cases of scrotal hydrocele with iodine injection, equal success has not followed its injection into the sinuous ulcers of strumous subjects; and in the treatment of ringworm iodine has proved inferior to either strong acetic acid, sulphurous acid, or lotion of corrosive sublimate. (See *Medical Times and Gazette,* Oct. 1, 1870.)

Blood-letting in a case of Epilepsy complicated with Acute Cerebral Congestion.—Dr. W. Campbell relates an interesting case of a maid-servant who fell down-stairs with a child in her arms, and was supposed to be hysterical from fear. He found her suffering from violent convulsions, recovering every few minutes. She was unconscious, respiration appearing to be suspended; eyes shut, with dilated pupils; face much suffused; pulse very frequent and full. Concluding she was suffering from acute congestion of the brain, perhaps originating in the powerful nervous impression, and having ascertained that she had been in this condition for two hours, despite the application of cold to the head and other restoratives, Dr. Campbell decided to try blood-letting. From 10 to 12 ounces

were abstracted, and the patient then began to look about her in a bewildered way, whilst the convulsions ceased, and the breathing was audibly performed. The flow of blood was temporarily arrested; but as the convulsions did not recur, and she became more and more conscious, the arm was bound up. The pulse speedily fell from 135 to 100, and speedy convalescence ensued. (*Medical Times and Gazette*, Oct. 8, 1870.)

Action of Belladonna in arresting Nocturnal Incontinence of Urine.—Dr. Burney Yeo points to this action as one of the facts showing that medicines have a very important influence in modifying or arresting disordered conditions of the bodily organs. He gives two cases—one of a compositor, æt. 16, who had suffered from nocturnal incontinence of urine for many years. He was ordered to take five minims of the tincture of belladonna and ten minims of the tincture of the perchloride of iron three times a day, and to avoid drinking any fluid for some hours before bedtime. After a week, his condition being improved, he was ordered ten minims of the tincture of belladonna, and after another week the dose was increased to fifteen minims, the steel being omitted. Improvement still occurring, he took twenty minims three times a day, but this began to affect the eyes, and it was reduced to a single dose of twenty minims, taken at night: perfect recovery followed. The second case was similar to the above, and occurred in a young girl of 17. A similar plan was followed by equally successful results. In neither of these cases was there any irritability of the bladder by day. In explanation of the curative effect of the remedy, Dr. Yeo believes that, acting possibly through the sympathetic nerve fibres, it strengthens the involuntary efforts of the sphincter fibres at the neck of the bladder. (See *Lancet*, Oct. 22, 1870.)

Extracts from British and Foreign Journals.

Salicine in Typhoid Fevers.—Professor Ercolani obtained great advantage from the employment of salicine in an epidemic of typhoid fever attacking horses and cattle of his district, and his results were confirmed by those of other practitioners. On these grounds M. Verardini has employed it largely in similar cases occurring in man, and concludes his observations as follows:—1. Salicine was discovered by Fontana in 1825, in the bark of the *Salix alba*. Hitherto it has only been employed as a succedaneum for quinine in intermittent fevers; but it has now been shown to exercise a great influence over the course of typhoid fevers both in animals and in man. The dose for adults is from 30 to 45 grains per diem, according to the severity of the case, and it should be given by the mouth; though, if the abdominal symptoms be severe, it may also be administered by the rectum. 2. Comparative experiments made with benzoic acid and with salicic acid have led him to return to salicine as the most efficacious of the three remedies. 3. Salicine acts as an antidote in the case of animals poisoned by the leaves or aqueous extract of the rose-laurel, which produces symptoms analogous to those of severe typhoid fever. 4. Microscopic examination of the blood of several patients suffering from typhoid fever has confirmed the statement of Tigri in regard to the presence of very active *bacteria* in the blood. These microzoaries are found to be numerous in proportion to the intensity of the disease when at its height; they do not appear to be present either at its commencement or towards its termination. 5. Inoculation of the blood of healthy with that of diseased animals produces in some instances death, in others only temporary malaise. The remedial power of salicine against typhoid diseases appears to be due to its anti-zymotic qualities. Very recently M. Halmagrand has recommended the employment of salicine, combined with ferro-cyanide of potassium, as a remedy for intermittent fever, 2 grains of this salt being equal to 1 of quinine. (*Le Mouvement Médical*, 1870.)

On the Purgative Action of the Sulphovinate of Sodium.—Dr. Rabuteau, after giving in detail the result of 25

clinical observations, some of them made upon himself, terminates thus:

1. On account of its taste, which is very mild at first, and sweet afterward, the sulphovinate of sodium is taken without repugnance by persons difficult to please, and even by children.

2. The sulphovinate of sodium is the most pleasant of saline cathartics; it soothes colics, which in certain cases may exist before its administration.

3. This remedy producing no pain, no intestinal contraction, acting, in a word, as a type of cathartics exclusively dialytic, may be prescribed even during menstruation and pregnancy.

4. The sulphovinate of sodium must be preferred to the citrate of magnesium, because it possesses all the advantages of this latter, without its inconveniences. First, it is more agreeable to take than citrate of magnesia, when it is dissolved in seltzer-water; in the second place, it is not apt to determine the formation of any calculus. We know, on the contrary, that it is dangerous to use for too long a time salts of magnesia, and no judicious physician will prescribe those salts, even the citrate, to old people, and, above all, to those labouring under catarrh of the bladder, lest they should determine the formation of calculi of ammoniaco-magnesian phosphates.

5. This remedy operates in relatively small doses; 25 grammes dissolved in three glasses of water, or better of seltzer-water, are always sufficient to produce five or six stools in an adult. The dose of 10 grammes is always sufficient for children, and produces even marked effects in adults.

6. It does not seem to produce *consecutive constipation*, so frequent after the other saline cathartics. This interesting result is owing to the rapid elimination of the sulphovinate of sodium which may have been absorbed. (*New York Medical Gazette*, July 23, 1870.)

Milk a Preservative against Saturnine Affections.—Toward the end of 1867, says M. Didierjean, my attention was called to two workmen, who had never been sick, notwithstanding their long stay in one of the two brigades working at the preparation of minium. All the others had been more or less attacked. These two men, who were an exception among the others, were in rather good circumstances, as compared with their comrades; they owned a small piece of property, and were in the habit of bringing with them every day a ration of milk, which was their usual drink at lunch in the factory. This observation struck the doctor, who then thought that milk could be substituted with advantage for the drinks made with sulphuric acid, which had been tried several times without success. He then recommended milk to be drunk in the factory, and from the

month of February 1868 it has become obligatory. Each man must bring with him a quart of milk, for which the administration makes an allowance. After a short time the workmen felt the effect of this drink, and for over eighteen months there has not been a single case of sickness in the factory. It is certainly a remedy which is not dangerous to try, and which may be perhaps useful in acute lead poisoning. (*New York Medical Gazette*, July 23, 1870.)

Physiological Properties of Momordica Elaterium.—Dr. Köhler, of Halle, has just contributed to *Virchow's Archiv* a valuable paper on the historical, chemical, and physiological properties of the juice of this plant, and we present to our readers a condensed account of the last or physiological section. The activity of the juice is dependent on the presence of elaterin, which is a chemically indifferent substance analogous to the resins, and incapable of forming salts with either acids or bases. The cause of the violent purgative action of such indifferent substances as elaterin, and the analogous compounds obtained from the Convolvulaceæ, Euphorbiaceæ, and Guttiferæ, has up to a recent period been involved in much mystery. Some clue to an explanation has, however, been obtained from the experiments of C. M. G. Zwicke on the action of convolvulin and jalappin, from which it would appear that the activity of these resins is due to their solution in the bile. Hagentorn also found that when convolvulin had been converted into a soluble convolvulinic acid it still was incapable of producing any drastic effects in cats when rubbed into the skin, or applied to the mucous membrane of the nose, mouth, or stomach, or introduced into the jugular vein. He even found that the resin might be introduced into a loop of the small intestine, the contents of which had been expressed and a ligature placed upon it, above and below, without producing vomiting or purging after twenty-four hours' stay, though the mucous membrane was reddened. Untiedt continued Hagentorn's experiments, and satisfied himself that convolvulinates of the alkalies, when subcutaneously injected or introduced into the jugular vein, were inoperative. He then employed the rectum as the place of application, and found that whilst clysters of pure convolvulin, or of convolvulin and taurin, or of convolvulin and choloidinate of soda, were quite inoperative, a mixture of convolvulin and bile, or of convolvulin and glycocholate or taurocholate of soda, immediately occasioned violent diarrhœa. On the addition of soap the purging followed in four hours, and Untiedt has shown, and his statements have been corroborated by Bastgen, that in the latter case a partial conversion of convolvulin into convovulinolcic acid occurs. From these experiments, then, it appears that

bile, biliary acids, and soap constitute a menstruum for these resinous compounds, and their purgative action is due to the local irritation the solution in the intestinal juices excites, which solution is materially aided by the bile. Dr. Köhler gives the details of a considerable number of experiments he has himself undertaken, and demonstrates that the drastic cathartics may be divided into two, or perhaps even three, classes—namely, first into those that are, and those that are not, dependent for their activity on the presence and solvent action of the bile: the former including aloes, croton oil, rhubarb, senna, &c.; the latter being again divisible into those which, on being dissolved by the bile, act purely locally, as jalap, scammony, gamboge, agaricus, and those which, after solution in the bile, not only act locally, but are also absorbed into the blood, and act also on the nervous system; this group including the Cucurbitaceæ, as elaterium, colocynth, and bryony. (*Virchow's Archiv*, Band iv. Heft 3, 1870.)

Treatment of Hooping-Cough by Hydrochlorate of Quinine.—In consequence of the failure in his hands of various plans recommended for the treatment of hooping-cough, M. Breidenbach was induced to try the above-named remedy, already recommended by Binz, and in a small but very violent epidemic that came under his notice observed the greatest benefit from its use. The main feature in its employment he found to be correct dosage. The quantity given must be relatively large, as indeed was found to be the case by Binz. In the cases that were under his care the doses required varied according to the age of the patients (3 weeks to 8 years) and the violence of the attack, from 1½ to 15 grains per diem. No other remedy was employed, and there appear to be no contra-indications against it, and in none of the cases did symptoms of intoxication occur, rendering reduction in the doses given requisite. The action might fairly be called prompt. In the most violent case, the frequency and violence of the attacks had begun to abate in forty-eight hours, and a sub-conjunctival effusion, which till then had been persistent, began to exhibit symptoms of resorption. In order to avoid a recurrence of the attacks, he has been accustomed to continue the use of small doses for some time. (*Centralblatt f. d. Medicin. Wissenschaften.*)

Treatment of Stricture by Horsehair Bougies.—Dr. Mitscherlich, of Berlin, draws attention to the advantage that may sometimes be derived in cases of extremely tight strictures of the urethra from the employment of bougies composed of horsehair. He has always been able to reach the bladder with this simple instrument, and the hair has then served as a means whereby properly constructed sounds, having a minute opening

at their extremity, could be made to glide through the stricture. Horsehair, he remarks, is finer than any instrument that can be made of equal strength, whilst it possesses a certain degree of elasticity that renders it much preferable to those composed of whalebone. In nine cases he has had no failure. The following is one of his cases :—A soldier was wounded in action in 1849 : after some years an attempt was made to extract the ball, which was felt through the soft parts of the perineum. The attempt was unsuccessful, and the result was a fistulous opening in the perineum, through which a portion of the urine passed, and a hard and very contracted stricture of the urethra. The treatment of this was long essayed with fine elastic bougies in vain ; at length one was passed, but the patient absented himself, yet was soon obliged again to submit to treatment. M. Mitscherlich was successful in passing a fine horsehair, and over this perforated sounds of successively larger size, till at length a perfect cure was effected. (*Gazette Hebdomadaire*, 1870.)

Therapeutic use of Sodio-Chloride of Gold.—Dr. Martini recommends the employment of this remedy in cases of hysteria accompanied with obvious changes in the structure of the uterus. In cases under his own charge, he observed that as the local disease diminished the nervous symptoms disappeared. Cases of simple hysteria did not appear to be improved by it. It is beneficial as a tonic in cases of relaxation of the uterine tissues. He mentions several cases of true congenital atrophy of the vaginal portion of the uterus producing sterility. Under its use the cervix uteri increased in size and firmness, became healthy, and ultimately conception occurred in three instances. He found it very useful in habitual abortion and premature labour depending on induration of the womb, and in degenerations and ovarian dropsies of an aggravated character. On account of its styptic taste it cannot well be given either in solution or in powder. It is therefore advisable to administer it in the form of a pill, the dose being one-tenth of a grain before meals, which should contain no acids. (*Schmidt's Jahrb. der Gesammt. Medicin*, June 23, 1870.)

Igni-Puncture.—Under this title Professor Richet, of Paris, describes, in the *Opinion Médicale* of Paris, a mode of treatment he has long adopted, and which he considers to be peculiarly adapted for white swellings, though applicable also to a variety of other complaints. It consists in plunging at various times, and at different points of the diseased tissue, a small bullet-shaped cautery that ends in a long and fine needle, both of which have been heated to whiteness; the needle is made of platinum, and is two or three inches in length, the base having a diameter of a sixth of an inch, whilst the extremity is finely

pointed. The ball, to which it is attached at right angles for conveniency of manipulation, is made of steel, and is about a third of an inch in diameter. Supposing the affection to be a white swelling of the knee, the appropriate points to be punctured are marked with ink, the instrument heated, and rapidly made to penetrate to some depth at the points indicated. As soon as entered the needle is withdrawn. (*Wiener Medicinischer Wochenschrift*, No. 43, 1870.)

The Treatment of Gonorrhœa and Gleet by Tannin and Glycerine.—Dr. Schuster, finding that the ordinary methods of treatment of these affections are not very successful, the abortive treatment with strong solutions of caustics not unfrequently producing violent pain, severe inflammation, and hæmorrhage, whilst weak caustic solutions, though effecting a cure of the gonorrhœa, often leave a troublesome gleet behind, suggests a new plan of treatment by means of tannin and glycerine. When these two substances are mingled together, they in the first instance form a soft waxy substance, which soon becomes hard and brown, but again softens when exposed to a moist atmosphere at about 100° F. The tanno-glycerine rods employed by Dr. Schuster are three or four inches long, cylindrical, with well-rounded ends, and are composed of—tannin thirty grains, opium powder one grain, and a sufficient quantity of glycerine to form a pastille. These pencils are hard in winter, soft in summer, and require to be immersed for a few moments before their introduction into warm water. They should be left in the urethra for a few minutes, and then gently withdrawn. As a rule they occasion no pain, though this follows if they are left in for as long a period as an hour, the cause appearing to be that the tannin forms a concrete mass with the mucus or pus, that acts like a foreign body. Dr. Schuster has not observed orchitis, irritation of the prostate, or inflammation of the bladder follow their use, though he usually recommends the employment of a suspensory bandage. Dr. Schuster believes that the seat of gleet is in the portion of the urethra traversing the glans, and here the use of the pencils is very beneficial. In one case in which it was well marked a single application changed the urethra from a dark to a pale red colour, and materially diminished the swelling, and a second application five days subsequently effected a cure. (*Archiv für Dermat. u. Syphil.* Band ii. 1870, p. 176.)

Observations and Experiments on the use of Opium, Bromide of Potassium, and Cannabis Indica in Insanity.—Dr. Clouston remarks that so many cases of insanity consist of simple brain excitement, whilst in so many more excitement is the most distressing symptom, that if we could discover any agent that would subdue this excitement and at the same time not interfere

with the improved nutrition of the brain, which rest, tonics, and good diet will effect, and on which complete recovery of its normal functions depends, such an agent would be a most incalculable blessing. Dr. Clouston proceeds to relate various cases, and draws the following conclusion: The combination of bromide of potassium and tincture of cannabis subdued the excitement in the greater number of cases, whilst its effects were more potent and lasting than any of the others. Of the twenty-nine times in which it was given it decidedly subdued the excitement on twenty-six occasions, or in ninety per cent. of them. Opium was the next drug in potency of effect, though it only subdued the excitement in nineteen of the twenty-nine experiments, being sixty-six per cent. The bromide of potassium alone allayed the excitement in about one-half the experiments in which it was used, but its effects were very much less decided in the extent to which it allayed the excitement. Its effects, however, usually lasted for the remainder of the day on which it was given. In one-half of the experiments two drachms were given, and this dose it was that had the effect on the excitement in five of the seven experiments in which any effect was observed. The Indian hemp produced abatement of the mania in twelve out of the fifteen experiments, but in almost all these cases its effects were comparatively slight, and seldom lasted for more than three hours. The whisky was followed by marked cessation of the excitement in fourteen out of twenty-one experiments, and its effects, contrary to what might have been expected, lasted usually for seven or eight hours. Beef-tea had no appreciable immediate effect on the maniacal excitement in most cases. (*Fothergillian Prize Essay*, 1870.)

Therapeutic employment of Hæmatosine.—M. Tabourin observes that hæmatosine, the red colouring matter of the blood, is a proteinic substance, the chemical composition of which is analogous to that of fibrine and albumen, but contains a certain proportion, amounting to about a tenth part of its weight, of iron. He gives the details of a process by which it may be obtained in a state of tolerable purity, when it forms an inodorous, insipid powder, of metallic appearance, insoluble in water and in alcohol, but soluble in ether, alcohol, or the essential oils when acidified or rendered slightly alkalescent. It can be easily administered in the form of pills or lozenges in chocolate, or with other solid or liquid food. It is superior to iron in being better tolerated by the digestive organs, by which it is absorbed with facility. It is a powerful tonic, and an excellent invigorator of the stomach. (*Lyon Medical Journal*, Août 1870.)

Intra-uterine Medication.—Dr. Lente states that he has had considerable experience of this mode of applying remedies

to the uterus, and that he has employed nitrate of silver and iodine. In regard to the alleged perfect safety and comparative painlessness of iodine he mentions one case where the os internum had been slightly dilated with an olive-pointed silver probe; without any serious pain he introduced into the cavity of the uterus a little tincture of iodine (U.S.P.) by means of an ordinary cotton carrier. Immediately the most alarming pain and prostration set in, and he really thought the patient would die. By the use of brandy and other restoratives, however, she recovered, and twelve hours afterwards was quite well. Similar symptoms occurred in a second case in which the tincture was much diluted. Nevertheless, when properly employed he considers it to be one of the best and safest remedies we possess. It is remarkable that the injection of pure water or slightly saline solution into the uterine cavity, or even into the vagina, will sometimes give rise to the same symptoms, and the explanations suggested have been that they are due to shock; to entrance of air into the vessels; to the passage of fluid through the Fallopian tubes; or possibly to the entrance of fluid into the circulation, of which the first is the most probable. To avoid the overdistention of the uterus that produces the shock, he recommends the os to be dilated, and the mucus in the cavity to be removed by a syringe. He claims superior advantages, however, for the solid nitrate of silver, which he applies lightly to the surface by means of his porte-caustique. As a general rule it causes very severe pain, which, however, may be checked by the administration of an anodyne or the hypodermic injection of morphia. If pushed too far it may produce induration and contraction of the os internum. Speaking generally it should not be applied more than once a fortnight. (*New York Medical Journal,* vol. xii. p. 129.)

Clinical Observations on the Bromides.—Dr. Namias publishes some important observations on the results of experiments made with the bromides during several past years. In 1867 he found that bromide of potassium was sometimes able to cure epilepsy, or at least that it could diminish the violence of the attacks and the frequency of their recurrence. To effect this, however, considerable doses were requisite, amounting even to as much as six drachms. In the event of any poisonous effects of the drug appearing, they vanish on the immediate stoppage of its administration in from two to three days. Bromide of potassium possesses a cumulative power, and may remain for a long time in the body, traces being discoverable for a considerable period in the urine. In 1868 the conclusions which he arrived at were—That a certain accumulation of bromide of potassium in the body of epileptic

patients was required before it could produce its effects. The diminution of the accumulation of the bromide in the body can be estimated by the reduction of the quantity appearing in the urine. In one case the amount discharged in twenty-four hours by the urine amounted to a littte more than fifteen grains, and he concluded from this that it was eliminated by other channels. The epileptic attacks cease when the urine contains 0·033 per cent. of bromide of potassium; they recur when the proportion falls to 0·030 per cent. The salt can also be discovered in the saliva, 100 parts containing 0·150 of the bromide. It exerts so specific an action in epilepsy as to influence it favourably even when the causes determining the attack still persist. His experiments in 1869 enabled him to add to the foregoing that the bromide not only accumulates in the fluids but in the solids of the body; that it checks reflectorial and convulsive movements, even in cases where it may be unable to exert any influence on the immediate cause of the attack; that bromide of iron corrects defective formation of blood, quiets nervous excitation, and produces the combined effects of iron and the bromides. In accordance with his present experience, Professor Namias regards the *bromide of iron* as being in many instances a therapeutic agent of superior value in epilepsy even to the bromide of potassium. (*Giornale Veneto di Scienze Mediche*, Ser. iii. T. 2, 1870.)

Treatment of Catarrhal Pneumonia of Infants at the breast by Carbonate of Ammonia.—Dr. Stierlin, of Schaffhausen, observes that the danger of catarrhal pneumonia (bronchopneumony, lobular pneumonia) in infants, whether consequent on measles, hooping-cough, or bronchial catarrh, is due to the circumstance that the bronchiæ become plugged, carbonic acid narcosis succeeds, and too small a quantity of blood enters the left ventricle, which exerts a paralysing influence upon the heart. Dr. Stierlin formerly treated such little patients with emetics, as ipecacuanha and vinum antimoniale, calomel and mustard poultices, but with very indifferent results. But after he had begun to administer ammonium carbonicum (carbonate of ammonia), and ammonium carbonicum pyro-oleosum, he was so successful in the treatment of this disease, which according to Rilliet and Barthez is absolutely fatal during the first year of life, that of 150 patients only 7 died. He usually prescribed the ammonium carbonicum to the extent of 20 grains; or the liquor ammonium carbon. pyro-oleosi to the extent of half a drachm in two ounces of fluid, of which a teaspoonful should be taken every hour. During the first year of life, besides the above, he applied sinapisms to the chest. In older and stronger children he also prescribed emetics. He never observed any disadvantageous effects. (*Berliner Wochenschrift*, 1870, No. 26.)

The *Journal of Mental Science* (No. 75, edited by Drs. Henry Maudsley and John Sibbald) contains the following articles:—1. The Case and Treatment of the Insane Poor, being the President's Address by Robert Boyd, M.D. 2. The Psychology of Criminals, by J. Bruce Thompson. 3. Illustrations of the Influence of the Mind upon the Body in Health and Disease, by Daniel H. Tuke. 4. A Contribution to the Study of the so-called Puerperal Insanity, by J. Thompson Dickson, M.R. 5. Felo de Se, by J. G. Davey. 6. On Boarding the Insane in licensed Private Houses, by Alexander Robertson, M.D.; together with Reviews and Notes. The second and third are particularly interesting essays; the fifth is a consideration of the circumstances attending the death of James Sadleir, and some other well-known cases.

The original articles contained in Dr. Hammond's *Psychological Journal* for October are:—1. Notes on Ecstasy and other Dramatic Disorders of the Nervous System, by Meredith Clymer, M.D. 2. A Medico-legal Opinion relating to the Sanity of Carlton Gates, by Charles A. Lee, M.D. 3. Physical Degeneracy. 4. The Plea of Insanity in Criminal Cases, by James O'Dea; and 5. Review of the Case of the People *v.* Elisha B. Fero, by George T. Stevens, M.D.; together with Notes of the quarter, &c.

Notes and Queries.

DEPARTMENT OF NEW INVENTIONS.

Condy's Fluids.—We have received a lengthy remonstrance from Mr. H. Bollman Condy on the subject of our report on the various disinfecting and purifying fluids sold in his name, and we must say that Mr. Condy's letter shows a strange want of appreciation of the motives with which we called attention to the composition and the prices of his goods. Our statement was substantially this: The manganates and permanganates were long ago known to the chemist as powerful oxidisers, but Mr. Condy was the first person to see that this property might be turned to the purposes of disinfection, and to commence the manufacture of these agents on the large scale. We remonstrated with him, however, for maintaining so high a price for these fluids in proportion to the intrinsic cost of the active ingredients. We showed that *pure permanganate of potash*, representing the highest oxidising, and therefore disinfecting power, possessed by any ingredient of Mr. Condy's fluids, can be purchased retail for *two shillings an ounce*, and that with this quantity it would be possible to convert 400 ounces of distilled water into a disinfecting fluid of equal power with the No. III. "Ozonised water;" 400 ounces of which, at Mr. Condy's price, would cost *about eight guineas*. That with the same two shillings' worth of permanganate of potash one could convert 50 ounces of distilled water into a disinfectant of equal strength with the "green" or the "red" solutions, while the same quantity of the latter, at Mr. Condy's prices, would cost respectively 1*s.* 9*d.* and 3*s.* 6*d.*; but that the red and green fluids, being made mainly with the cheap manganates and permanganates of soda, the cost of which is very greatly less than that of chemically pure permanganate of potash, there is in fact an extremely large margin of profit to the manufacturer. In restating the gist of our original remarks, we have now to add, that we might have greatly strengthened them; for we have discovered that, in Germany, the purest possible permanganate of potash can be procured for *threepence* an ounce,

or *eight times cheaper than the specimen which formed the basis of our comparisons.*

Now to these criticisms Mr. Condy makes three kinds of objections, which it is necessary to separate carefully from each other. In the first place, he maintains that a trader has a right to make what profits he can; to quote his own words, "It (our table of analysis) shows indeed that the selling price of Condy's fluid is somewhat (!) higher in two of the kinds than that of the equivalent quantity of its active ingredient. But surely this is nothing unusual; on the contrary, it is the rule in such cases, as every chemist and druggist must know. Is the Liquor Potassæ Permanganatis of the Pharmacopœia dispensed per ounce at the price of the eight grains of the permanganate contained therein? Far from this being so, sixpence per ounce is very commonly charged for it. Is it not the case that all other proprietary disinfecting preparations sell at rates greatly in excess of the value of the quantity of the active ingredients contained in them?" Really, this needs no comment. We had paid Mr. Condy the compliment of presuming that his views were not altogether those of a mere trader; the claims to scientific discovery which he put forward had led us to believe in his patriotic intention to bring a valuable sanitary discovery within the reach of the poor, and of public health authorities who might require to use it on a large scale. We beg his pardon if we have been mistaken.

The second objection which Mr. Condy makes to our remarks is to the effect that even the oxidising power of the manganates was not applied in laboratories before Hofmann (1856), and that Hofmann learned it from Condy. That is quite erroneous; our analyst informs us that this use of these salts was common *long before* 1856, to his personal knowledge.

The third objection to our remarks is a charge of inaccuracy in our analysis of the "Ozonised water." In answer to this we have to remark that the examination was made by one of the first analysts of this country, and we are therefore disinclined to attach any very great importance to Mr. Condy's hints about some previously quite unknown permanganate. The only object in using a permanganate for toilet purposes, one would think, must be for its oxidising power. It is a fact that for three farthings one could impregnate eight ounces of distilled water with $\frac{1}{4}$ per cent. of pure permanganate of potash (purchased in Germany); and it is also a fact that such a solution would be practically tasteless.

After all, however, it is comparatively unimportant what the character or price of a toilet-water may be. But we must repeat the expression of our regret that Mr. Condy does not yet see his

way to reducing the above-mentioned scale of profits on his green and red fluids, which, in order to make them useful as disinfectants in precisely the places where there is the most urgent need for this class of agents, ought certainly to be sold at a considerably cheaper rate. We would even venture to predict that, in the long run, commercial success would also be found to attend upon the lower rather than the higher rates of profit; and we should be delighted to hear that Mr. Condy had benefited himself while doing a service to the public.

Bellows' Concentric Calculators.—These most ingenious and useful contrivances deserve our sincere gratitude. They are simply little pocket folding-cards, containing revolving concentric dials, by means of which equivalents in weights and measures of different countries may be promptly read off. At this moment we have "Series A" under our eyes, by means of which the French (Metric) weight and fluid measures may be converted into their English equivalents. It is specially adapted for the use of chemists, medical students, &c.; and as its cost is trifling, we advise every medical practitioner and student to buy one. They should also purchase "Series B," which contains the reverse of "Series A," viz. arrangements for converting English measures into French.

A Galvano-Caustic Battery.—Mr. Pratt has shown us an excellent and powerful galvano-caustic battery, of Stöhrer's: it is a modified Bunsen: the elements being large plates of zinc and carbon. The apparatus is very convenient, as, when not in action, the plates are washed clean of acid by a simple plunge in water, and are then suspended over the cells, only to be re-immersed when the battery is used. By directing a current of air upon the surface of the exciting fluid it is found easy to get a more perfect and instant glow of white heat in the cauteriser than could otherwise be secured. For hospital use this instrument would be especially appropriate.

CORRESPONDENCE.

Food and Force.—We have to apologize for a mistake we made in attributing to Dr. Munroe, of Hull, a communication respecting the respective shares of nitrogenous and non-nitrogenous food-elements in the dynamic work of the body, to which we replied at some length in the October *Practitioner*. Our correspondent was Dr. Munro, of Cupar.

Remedy for Hæmorrhoids.—Mr. H. A. Allbutt, of Leeds, sends us this note :—"I have found the following mixture very efficacious in the treatment of piles; and I have no doubt, if any medical practitioner will give it a trial, he will be equally pleased with the result :—

℞ Tinct. sennæ, ʒvj.
Tinct. hyoscyam. ʒiss.
Inf. quassiæ ad ʒviij.
M. ft. mist. ʒj ter in die sumend.

If the tongue is furred, or there is any sign of gastric derangement, about a drachm of carbonate of soda may be added to the mixture."

Arsenic in Cholera.—Dr. Robert Cockerton, of Guernsey, writes as follows :—"In reading your review of Dr. Macnamara's treatise on Asiatic Cholera in the February number of the *Practitioner*, there is mention made of Dr. John Murray's account of the various modes of treatment of cholera in India; but I do not find that liq. arsenicalis has been fairly tried in India or in England. I am therefore anxious to bring to the notice of the profession the surprising effects of Fowler's solution in a case I had ten years ago, in order that its value or usefulness may be tested.

"John Powell, 33, a turnpike-gate keeper, was seized with vomiting and purging, the dejections being of the watery rice-ground character and not feculent. The eyes were sunken and the eyelids of a blue leaden appearance; the voice reduced to a whisper. He had also violent cramps.

"He was ordered to take six minims of liq. arsenicalis after every vomit. The first and second doses were rejected, as might be expected, but the third remained, and the *vomiting and purging ceased* entirely. After the fifth dose the *voice returned*. The medicine was afterwards given at gradually increased intervals, the dose each time being diminished, till all the six-ounce mixture was taken without any injurious effects of the arsenic or any secondary symptoms.

"The action of the arsenic was prompt to arrest the urgent symptoms, and the progress of the case towards recovery quick and complete. He took enough of the solution to produce severe gastro-intestinal irritation in a healthy person, and to aggravate all the symptoms of English cholera or autumnal diarrhœa.

"I had no opportunity of giving the arsenic a further trial; but it seems that arsenic has not been used in India, I therefore request the favour of your bearing this case in mind. It appears to me that it is in the rice-water stage that liq. arsenicalis is beneficial, and that there is in that stage an immunity to the ordinary effects of the drug in a healthy person." [This note has been mislaid for several months.—ED. PRACT.]

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Physiological Action of Nitrous Oxide. Pamphlet, by R. Amory, M.D. New York: Appleton.

On the Characters of the Akazga Plant. By Dr. T. R. Fraser. Edinburgh, 1868.

[We print this announcement simply as an apology for an involuntary omission in our last number. In mentioning the researches of MM. Rabuteau and Peyre on the Akazga, or "M'boundou," we forgot to mention the prior claims of Dr. Fraser, who described the characters and actions of the plant two years before the French observers.]

On the Kombi Arrow-poison (Strophanthus Hispidus, DC.) of the Manganja district of Africa. By Dr. Thomas R. Fraser. [Reprinted from *Edinburgh Philosophical Transactions.*]

The Clinical Examination of the Urine in relation to Disease. By C. Black, M.D., M.R.C.P. London: Churchills, 1870.

[1] Any of the foreign works may be procured by application to Williams and Norgate, of Henrietta Street, Covent Garden, W.C.; or Messrs. Dulau, of Soho Square, W.C.

THE PRACTITIONER.

DECEMBER, 1870.

Original Communications.

ON THE COMPRESSION OF THE VAGUS NERVE, CONSIDERED AS A MEANS OF PRODUCING ASTHENIA OR ANÆSTHESIA IN SURGICAL OPERATIONS.

BY AUGUSTUS WALLER, M.D., F.R.S., GENEVA.

My foregoing observations must, I think, lead any unprejudiced person to the conclusion that pressure on the vagus at the neck not only reproduces on man most of the principal symptoms observed on animals, when this nerve is isolated and subjected to the direct influence of galvanism or other irritant, but that it, moreover, enables us to examine and elucidate a series of symptoms we can only study on man. Such are the various sensations which attend compression of this nerve, and which can only be effectually studied by the physician, either on himself, or on persons capable of accurately describing the sensations which they experience. As a corollary to the above, he is by this means enabled for the first time to ascertain the condition of the nerve and its principal branches in obscure affections of the nervous system, which has hitherto been a desideratum in practice.

I allude more particularly to the various nervous affections of such organs as the heart, the lungs, the stomach, or the larynx, where on theoretical grounds the disturbing influence has been attributed to the vagus, without, however, there existing any means of subjecting the question to the test of experience.

But, besides affording a means of clearing the diagnosis, we find, from my previous observations, that we can frequently employ vagal compression as a remedial agent for the alleviation or cure of various affections of the nervous system. It follows, as a necessary consequence of its benefit in some cases, that it must be inefficient or objectionable in others, for no remedial agent can claim the properties of a panacea. It is the province of the medical man, anxious for the advancement and dignity of his art, to distinguish the former from the latter—to sift the chaff from the wheat. But the full investigation of the question must necessarily be a work of labour and of time, and to this subject I propose to direct my attention in subsequent papers.

Meanwhile, however, there is a practical application of vagal pressure at once obvious, which some of my readers may have an opportunity of applying with advantage, and where there appears some reason to believe, although the point is surrounded by much uncertainty, that the ancients have anticipated us to a certain extent, for the Assyrians are reported to have used ligature of the vessels of the neck in cases of circumcision of adults. As the passage stands at present in Caspar Hoffmann, it is simply a *reductio ad absurdum*, as we cannot admit for a moment that to obviate a certain amount of pain for a short duration they should have had recourse to an operation almost necessarily fatal to life. But if instead of *ligature* we substitute *compression* of the cervical vessels, the passage becomes perfectly rational, and we are at once brought seriously to discuss the question whether on this point the Assyrians were not in advance of us, and whether at the present time we can substitute with advantage compression of the vagus instead of anæsthesia by refrigeration or by inhalation of chloroform for the performance of certain minor operations of surgery.

I have already alluded to the description given by Aristotle, who states that as a result of pressure: *ὧν ἐπιλαμβανομένων ἐνίοτε ἔξωθεν, ἄνευ πνιγμοῦ καταπίπτουσιν οἱ ἄνθρωποι, μετ' ἀναισθησίαις τὰ βλέψαρα συμβεβληκότες.*

We cannot but admire the graphic exactness with which he describes the symptoms produced by this means.

In my first experiments, more than twenty years ago, when I

was studying the subject of compression with reference to hysteria and epilepsy, two cases occurred where compression of the vagus was followed by all the symptoms described by Aristotle.

In each case the patient after moderate pressure fell down as if struck by lightning on the floor before me, like a lifeless corpse, with all the voluntary muscles completely relaxed. Scarcely had I time to become alarmed when sensation and voluntary power returned, although for some time afterwards there remained considerable weakness and debility, though not sufficient to prevent the patient from walking away unassisted.

If we had it in our power invariably to produce such symptoms as I describe, doubtless the method would constantly be had in requisition by the surgeon and physician. Such, however, is not the case, and Aristotle does not fail to mention "ἐνίοτε" sometimes.

As regards the exact value of this *sometimes*, my observations would lead me to substitute "*in some few instances*," as being more correct.

I must, however, freely own that in most of my observations my object has not been to produce these symptoms, and that I have avoided them as being in general foreign to the object which I had in view. I will therefore reserve for another occasion a statistical account of the effect produced on a given number of selected or unselected cases. Meanwhile I will mention the results I have obtained by means of this method as applied to surgery; but in so doing, I must premise that, practically speaking, it is desirable to class the symptoms under two heads, viz. the asthenic and the anæsthetic.

The asthenic symptoms, which at their culmination constitute loss of all voluntary power, present various intermediate degrees of intensity of muscular debility. A certain amount of debility is almost invariably the result of vagal pressure, resulting entirely or mostly from incident influence on the medulla oblongata, and evidenced especially by failure of the cardiac force, and loss or decrease of pulsation in the carotids.

In cases of dislocated bones of difficult reduction vagal pressure presents several advantages possessed by no other means with which I am acquainted, as it is unattended with any kind of danger, and is always at hand in any emergency, however

sudden. As an illustration of this I may state the following case of very recent occurrence :—

M. C——, a journeyman baker, a powerful and athletic man. In consequence of a fall downstairs the head of the humerus was dislocated beneath the clavicle. Dr. G. Julliard, whose patient he was, made an ineffectual attempt in the morning to reduce alone the fracture by placing his heel in the axilla. Some hours later Dr. J. L. Prevost and myself accompanied Dr. Julliard to give our assistance.

While the man was lying on the bed some unavailing attempts at reduction were made, when Dr. Julliard sent for chloroform. In the meantime I proposed to make another attempt with the assistance of compression of the vagus. After removing the pillows at the head, and arranging the patient more comfortably than before, I took my station at the head of the bed to apply compression on both sides, while Dr. Julliard grasped the limb, and Dr. Prevost performed counter-extension. At the end of two or three minutes, as near as I could judge, just as I felt the two carotids no longer beating beneath my fingers, a sudden click indicated the return of the bone into its socket.

In this instance, although the chloroform had only to be procured from a chemist's in the same house, the patient was bandaged and arranged comfortably before the messenger returned with the chloroform.

This case, however, offers but a faint instance of the advantage attendant upon a means of asthenia always ready at hand in the various emergencies of country practice.

The advantages of vagal compression as compared to chloroform are great from the relative innocuousness of the former agent. The administration of chloroform in the most skilful hands, and while surrounded with all the appliances of hospital practice, is still undeniably attended with a certain amount of danger, which is greatly increased when there is no medical man present to watch its effects. So much is this the case that, as Dr. Prevost pointed out to me, there were three fatal cases from chloroform within a few days' interval in the different hospitals of Paris, where it was administered for the purpose of reducing dislocation of the head of the humerus.

On the other hand, compression of the vagus is perfectly free from any danger whatever to life. I have used it in the most varied circumstances, and have never yet witnessed any instance whatever to inspire me with anxiety or doubt as to any fatal consequence.

To the ordinary observer the effects of vagal pressure appear to be attended with considerable danger, which is, however, more apparent than real. In the case of an individual falling to the ground as if struck by lightning with all the symptoms of insensibility so graphically described by Aristotle, the heart is always found to be pulsating, and the respiration in play; moreover the physiologist knows of no means of permanently affecting the muscular irritability of the heart by any agents, either mechanical or electrical, applied to the trunk of the vagus. Indeed the two vagi may be divided, as is well known, without arresting the action of the respiratory or the circulatory organs.

It is quite different with the ordinary anæsthetics, particularly chloroform, whose influence continues to accumulate in the various muscular organs, especially the heart, gradually destroying their irritability so insidiously that death may be imminent without our being aware of it. The only way to ascertain this death of the heart in the case of an animal is to expose and subject it to galvanism, when we observe that the toxic influence of the chloroform has destroyed its power of reacting under the influence of electricity and other agents.

We cannot shut our eyes to the fact that the danger attending the administration of chloroform is still considerable in the laboratory of the physiologist, even in the comparatively healthy subjects with which he has to deal, and until this danger can be obviated it is almost hopeless to expect perfect immunity in the operating room.

Guided by the ideas I have above enounced, regarding the nature of the cases where vagal pressure is most applicable, I have lately tried it in a case of tooth extraction. A molar tooth was extracted from an out-patient of the Hôpital Cantonal by one of the house-surgeons. While the patient was seated I was prepared at the back of the chair to apply pressure on both vagi. As soon as the key was gently applied round the tooth I began the pressure, and gave a sign for the operator to commence.

The result was perfectly satisfactory. According to the statement of the patient she had suffered no pain, and was most enthusiastic in her thanks to me. At the moment of extraction the patient cried out, which, however, occurs in many instances with chloroform, where, as in this case, the patients afterwards declare they have not felt any pain.

To resume the foregoing observations, we may say in the first place, that vagal compression generally produces a state of asthenia very suitable for the reduction of dislocations, &c., and that its application in such cases presents several advantages over chloroform, and is attended by none of its dangers. Its use may be considered as indicated in all cases of difficult reduction previous to the employment of any of the ordinary anæsthetics.

Secondly, in the case of tooth extraction, its employment produced, according to the patient, insensibility to pain, and it may probably be employed with advantage in many cases of the sort, and also in minor operations, such as for phimosis, &c.

It is with a melancholy pleasure that we print the above short paper, the last work ever done, probably, by our distinguished and lamented contributor, Dr. Augustus Waller, whose sudden death from angina pectoris a little while since produced such a painful feeling in the scientific world. The rising generation hardly knows the full merits of Dr. Waller as a physiological discoverer and pioneer; but some of the greatest advances in the physiology of the nervous system that have ever been made were his work, and he also anticipated many of the new views on inflammation by which Cohnheim and others have gained so much reputation. For ourselves, we may say that the loss to this journal, and to scientific therapeutics, from Dr. Waller's death is very great, for we had the full expectation of receiving from him a series of researches of the most valuable kind, on the application of physiology to therapeutics, and which he was probably of all persons living one of the most competent to carry out.—Ed. Practitioner.

ON THE ABUSE OF HYPODERMIC INJECTIONS OF MORPHIA.

BY DR. CLIFFORD ALLBUTT.

Now that the hypodermic use of morphia is brought into sensation novels as a melodramatic device, it may indeed be said to have reached the height of fashion. We may thank our stars if one of us be not seen ere long, syringe in hand, between Aspasia and Clodius in the windows of the Burlington Arcade.

It is not for me to say that I do not run this risk as nearly as anyone, for what I have written upon the subject hitherto has been to record the virtues of this admirable remedy, and to extend its applications. At the same time it seems the duty of those who use so potent a medicine, to consider the full bearings of their practice, and to make themselves as well aware of its dangers as of its virtues. For my part, although I have found the hypodermic use of morphia of great value in the relief of the painful spasmodic or inflammatory elements of many and very various diseases; and although I may, therefore, seem to have used morphia very extensively, yet I cannot compare myself with those practitioners of whom the syringe and phial are as constant companions as was the lancet to their fathers. There is another side of the question, however, of which we must admit that we are still very ignorant: that while on the one hand we know the eminent virtues of morphia when administered under the skin, and feel how sadly crippled we should now be without it; on the other hand, little or nothing has been said of any harm which may result from it, or of the evils which may come of its careless use. Among the numerous essays and records concerning the hypodermic use of morphia which have been published of late, both at home and

abroad, I cannot call to mind one in which its possible dangers have been considered; but I feel that the time has come when the attention of the profession will be called to this less pleasant side of the account. Thoughts of this kind have gradually gained a firmer footing in my own mind during the last three years; but while my fears were indefinite, I felt the time had not come for me to speak. Now my experience has been greater, I have a larger number of cases before me, and yet the uncomfortable fear of mischief is growing rather than diminishing. Setting aside the mere obstructive reasoning of those prejudiced against any new thing, especially if it claims much of their attention, I would raise the further question whether the hypodermic injection of morphia which avoids many of those discomforts and evils which belong to morphia taken by mouth, has any special dangers of its own, which may be none the less for being deferred? I ask this question not as one having an answer at hand, nor, indeed, as being able myself to contribute very much to the answer which is to come, but as one having some grounds to be uneasy, and seeking information from those who have it.

Is it not true that we are now often consulted by patients who have been injecting themselves daily or more than daily during long periods of time, for neuralgias which seem, nevertheless, as far from cure as they were at the outset? Such at least is my own experience. I have now nine patients in my mind who are or who have been under my own care, and in whom the hypodermic use of morphia has been constantly practised for periods varying from nine months to three years. These patients suffer from various forms of neuralgia—from abdominal, uterine, facial, cervico-brachial, sciatic and other pains—they seem as far from cure as ever they were, they all find relief in the incessant use of the syringe, and they all declare that without the syringe life would be insupportable. I have been much struck by what seems to me the formation of a new class of patients, patients suffering not monthly, nor weekly, but even daily, from neuralgias which are only kept at bay by repeated injections, which return when the influence of the injection has passed off, and which resist all curative treatment with wearisome obstinacy, but which do not seem in themselves to be necessarily intractable. Not

only so, but there are certain further symptoms which are common to these patients. The ease and recreation which naturally follows the arrest of intense pain, has passed by insidious gradations into a substantive sensation of well-being, of conscious activity, and of cheerfulness which is more than negative; which is more, I mean, than the mere recovery of natural elasticity on relief from pain. It has a certain tonic and stimulant effect which in the course of time is prized for its own sake, and is innocently enough welcomed as the evidence of a renewal of life. Here lies, to me, the anxious responsibility of the medical adviser. Is he to withhold that means which relieves pain, which restores appetite, which encourages activity and promotes ease and cheerfulness? I honestly confess that, during a long period, I could not see my way to forbidding the repetitions of the morphia. Injected morphia seemed so different to swallowed morphia, no one had experience of any ill effects from it, and we all had the daily experience of it as a means of peace and comfort, while pain on the other hand was as certainly the forerunner of wretchedness and exhaustion. Gradually, however, the conviction began to force itself upon my notice, that injections of morphia, though free from the ordinary evils of opium-eating, might, nevertheless, create the same artificial want and gain credit for assuaging a restlessness and depression of which it was itself the cause. Certainly, all the patients I have named fall off in the same way when the morphia fades from the system, and in all there is an indescribable depression and irritability which alone the morphia can relieve, and for which it is accordingly again and again administered. They are all satisfied that without the morphia the pain must return and will keep them in agony, and, when efforts are made to omit the dose, the pains do return until the fortitude of the patient is broken down, and the morphia is called for. At such times I have certainly felt it a great responsibility to say that pain, which I know is an evil, is less injurious than morphia, which may be an evil. Here experience is needed. Does morphia tend to encourage the very pains it pretends to relieve; or if not, does it at any rate induce in those who use it constantly, an artificial state which makes its further use a necessity? Are the subjects of morphia injection, that is, liable to become depressed,

relaxed, irritable, and dependent upon a new habit of constant intoxication? If this be so, we are incurring a grave risk in bidding people to inject whenever they need it, and in telling them that the morphia can have no ill effects upon them so long as it brings with it tranquillity and well-being. With regard to the question of the perpetuation of the morbid condition under the mask of a seeming relief, I have been struck, for example, with the apparently bad results of the hypodermic injection in acute rheumatism and in gout. In consulting practice it must of course be remembered that the cases which do well are not the subjects of consultations, but those which do badly. Still I cannot rid myself of the notion that in three cases of acute rheumatism and one of acute gout, which have come under my notice, the very bad result was due to the treatment by injection of morphia alone. In these three cases, which were followed by visceral complications, and in which an abiding crippling pain seemed to outlive all other changes, the treatment throughout had been by morphia injection alone. The use of this remedy as a solace from pain during the careful use of other therapeutical means can do nothing but good; but I repeat that, in the cases in question, I have much reason to suspect that a reliance upon hypodermic morphia only ended in that curious state of perpetuated pain, of irritability and depression, and of artificial need of a certain stimulant, which I have observed in the nine cases of neuralgia. I now leave the matter open, but I sincerely hope that some one more competent to deal with it than myself will continue the discussion.

There must by this time be a vast amount of experience of this remedy in the profession, and I would inquire whether any of my brethren have met with such cases as I have described, and if so, whether we are to see in them the victims of a treacherous remedy; or whether they are but instances of those cases of inveterate neuralgia which we can now relieve by hypodermic morphia, but which formerly raged unrestrained.

LEEDS, *September* 1870.

P.S.—Since the above was written, my friend Dr. Fothergill, of Leeds, has pointed out to me the following passage in Nie-

meyer's *Lehrbuch*:—"Sind längere Zeit hindurch Morphium-Injectionen gemacht, und ist man mit der Dosis höher und höher gestiegen, so stellt sich bei den Kranken, abgesehen von der Wiederkehr der Schmerzen, ein unwiderstehliches Bedürfniss nach den Injectionen ein. Sie fühlen sich flau, klagen über ein unbestimmtes Gefühl von Schwäche, von Unbehagen, von Zittern. Manche bezeichnen ihren Zustand geradezu als eine Art 'Katzenjammer.'"

PREPARATIONS OF CONIUM; THEIR CHARACTERS AND RELATIVE MEDICINAL VALUE.

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HAVING from time to time received, through the courtesy of their makers, certain preparations of hemlock, I have subjected them to examination with the view of determining their value, both intrinsically and as compared with the ordinary preparations. The results of this inquiry are now given with the view of assuring the medical practitioner—whose time is too fully occupied to allow him to determine such questions for himself—of the virtues of a given preparation of this valuable plant.

I must first premise that *the only reliable test of the amount of active principle in a preparation of hemlock is physiological action.* Chemical reagents, applied to the quantitative determination of conia in mixture with the ordinary constituents of vegetable infusions, give only the most fallacious results; and such a mode of estimating the amount of one of the most subtle and unstable of the vegetable alkaloids ought never more to be advocated.

To one acquainted with the physiological effects of conia, nothing is easier than to determine its amount by subjecting a nervous system of known power to its action. The experiment, moreover, is much more speedily performed than any chemical analysis, for an hour will usually suffice for the purpose.

Individuals of various age and nervous energy are the subjects of the following observations, and a view is at the same time afforded of the comparative susceptibility and the reverse of different individuals—or more restrictedly of different motor systems—to the influence of hemlock, which is of itself a very

interesting and instructive study in reference to the action of neurotic medicines.

Following my usual custom, I shall first describe the preparations in detail, and will commence with those of the fruit. I have already shown that conia stands to the ripe and unripe hemlock fruit pretty much in the same relation as opium does to the ripe and unripe fruit of the poppy. Conia abounds in the green pericarp, and gradually decreases as this hardens and becomes dry and brown. This does not quite agree with the following statements lately made by Schroff:[1]—1, that the unripe fruit of one-year conium plants contains the smallest amount of conia; 2, the unripe fruit of biennial plants contains the most conia, especially when the development of the fruit is advanced and near ripening; and 3, the perfectly ripe fruit, which is produced only by the biennial plants, stands in respect to efficacy between the former two. I think I have accumulated sufficient evidence to show that conium fruit differs somewhat in activity in different seasons; but I am convinced that annual plants will produce fruit as active as that of biennial ones, and of this I shall be able to adduce sufficient evidence, I believe, in the present communication. (See Cases 9, 13, 14, 15, and 16.) And as to the statement that biennial plants alone produce perfectly ripe fruit, I may say that I have kept up for the last four years a little plantation of annual hemlock plants derived from the self-sown seed of a previous generation of annual plants, so that I am at a loss to know what the Vienna professor can mean by this assertion.

1. *Extract of the Green Fruit.*—This was prepared by evaporating the tinctures (see below) to dryness over a water-bath. 1,000 grain measures yield 20 grains of bright yellowish brown brittle extract, which on exposure to the air becomes soft from the absorption of about 15 per cent. of water, and forms a translucent extract of the colour of Cape aloes; treated with excess of potash, it assumes a gamboge colour and evolves a powerful odour of conia.

2. *Fluid Extract of the Green Fruit.*—This is prepared by Edward R. Squibb, M.D., of Brooklyn, New York, a gentleman whose zeal and intelligence has been applied with much success

[1] Wochenblät. der K. K. Gesellschaft der Aerzte in Wien, 1870, No. 1.

to the advancement of pharmacy. The extract is a rich brown spirituous fluid of sp. gr. 0·992. *One minim represents one grain of the green undried fruit.* 1,000 grain measures yield 98 grains of extract, possessing the same physical characters as the preceding.

3. *Tincture of the Green Fruit.*—Two samples were used. The one, which I will distinguish as the "London tincture," was prepared by macerating the fresh undried crushed annual fruit in proof spirit and percolating (℥vj yielded ℥xxvj of tincture). The other was made according to the directions, and in the proportions for the tincture of the British Pharmacopœia, from dried American fruit sent to me by Dr. Manlius Smith (see "The Old Vegetable Neurotics," pp. 94 and 348). This, probably, is annual fruit also.

PREPARATIONS OF THE FRESH AND FLOWERING PLANT.

4. *Succus Conii* (P. B.).—This is a preparation which differs considerably in activity, the variability being due to the quantity of water contained in the plant (see "The Old Vegetable Neurotics," p. 349). The strength can be readily judged of by the depth of colour, which varies from that of pale sherry to dark Marsala wine—succus of the depth of colour of the latter will be thrice as strong as the palest variety. The juice used in the following observations represents two varieties: one intermediate in depth of colour, prepared, from year to year, by Mr. Buckle; and the other, the darkest and strongest, prepared in the unusually dry season of 1865, by Messrs. Allen and Hanburys. Both of these particular juices are fully described in my work (pp. 68 and 348).

5. *Extractum Conii* (P. B.).—I have already demonstrated[1] that 6 grains—the maximum dose—of this preparation cannot possibly contain more than the 0·084 of a grain of conia, a quantity insufficient to produce hemlock effects in a child two years old; and that 60 grains, at least, of the freshly and carefully prepared extract are required to produce slight effects in the active, and 15 or 20 at least in the most enfeebled adult. Even when the juice is spontaneously evaporated, as in the preparation of "Squire's extract," there is a progressive loss of conia, so that the extract contains no more than half the quan-

[1] Op. cit. p. 76 *et seq.*

tity that was contained in the juice. As it takes a long time to impress people with these facts, I will not omit this opportunity of showing the position which the extract occupies amongst the more active preparations of hemlock.

6. *Tincture of the Fresh Plant.*—Mr. Henry Deane, of Clapham Common, being desirous of ascertaining the relative efficacy of tinctures made, some from the fresh plant, and others from portions of the same parts dried and used immediately, has furnished me with these two varieties of tincture of conium. The plants used in this and the following preparation were in perfection, about half blown, and were gathered in the last week of June 1869. The tincture of the fresh plant was prepared by exhausting 32 ounces (avoird.) of the herb, previously crushed in a mill, with rectified spirit, until 53 fluid ounces of tincture were obtained (= nearly 5 drachms of the fresh plant in f. ℥j). At first it had a grass-green tinge, but became brownish on keeping; sp. gr. ·940; and 1,000 grain measures yield 36 grains of light yellowish brown extract, which absorbs 15 per cent. of water. During the evaporation a quantity of green resin separates.

PREPARATIONS OF THE DRIED PLANT.

7. *Tincture of the Dried Plant.*—The herb employed was a portion of that used in the previous preparation. It was dried by a natural heat in the open air, and used as soon as this was effected: 16 ounces of the fresh herb yielded 4 ounces of the dry. The tincture was prepared according to the directions of the P. L. 1851, *i.e.* in the proportion of 2½ ounces (avoird.) to 20 fluid ounces of rectified spirit (= 10 ounces of the fresh herb in the pint = ½ ounce in 1 ounce). It had and still retains a bright green tinge, and a quantity of vivid emerald green resin separates on evaporation. Sp. gr. ·940; 1,000 grain measures yield 32 grains of extract, possessing the same general characters as that last described, but being still more deliquescent, absorbing 25 per cent. of water.

8. *Fluid Extract of the Dried Leaves.*—This is made by Messrs. Clarke, Bleasdale, Bell & Co., of York. The herb used in the preparation was gathered in the neighbourhood of York at

midsummer 1868 (an exceptionally hot and dry season). The roughly-ground dried leaves were exhausted by percolation of proof spirit. The spirit was then distilled off, and the extract further evaporated until *one fluid drachm equalled one drachm of the dried leaves* = ½ ounce of fresh herb. It is a dark yellowish brown watery fluid of a rank hemlock odour, depositing much greenish brown resin on the sides of the bottle. 1,000 grain measures yield 195 grains of bright orange brown brittle extract, which rapidly absorbs water to the extent of 19 per cent.

9. *Benzoate of Conia.*—A member of a city firm of druggists lately deposited with me a solution labelled "Benzoate of conia: one drachm contains 2 grains; dose from 5 to 20 drops." I subsequently received from him samples of the solid substance. A dry salt of conia is a great desideratum, and I welcomed the preparation as a valuable addition to our Materia Medica. Failing, however, to find any mention of benzoate of conia in chemical works, and finding that I could not obtain any physiological effects in my own person and in others, even when the dose was increased to 20 *grains* of the solid substance, I was induced to give it a thorough examination. *The solution* is a spirituous, bright, straw-coloured fluid, of sp. gr. ·994·8, neutral, but of a warm sodaic taste; 1,000 grain measures yield 29·5 grains of residue identical with the solid substance. The mineral acids immediately, and acetic acid after an interval, precipitated abundance of benzoic acid. No conia odour was developed when either the solution itself or the acid fluids from which the benzoic acid had been precipitated, were supersaturated with potash. *The solid* is composed of granular masses of minute crystals of a dirty-straw colour, readily soluble in dilute spirit, and soluble, with slight effervescence, discoloration, and liberation of hydrochloric acid gas, in sulphuric acid. Neither heat nor excess of potash elicits the faintest odour of conia. At a high temperature it melts and blackens, emitting white fumes of benzoic acid, then boils and burns with a bright but smoky flame. After complete combustion 100 grains yield 47·2 grains of ash, which dissolves in dilute nitric acid, with brisk and prolonged effervescence; it is chiefly composed of soda, with some chloride of sodium, a little magnesia, and a trace of sulphuric acid. The reactions are in the main those of benzoate of soda;

and it appears, therefore, both from the absence of physiological effects and from the chemical analysis, that the so-called benzoate of conia is an impure benzoate of soda, and that it is devoid of a trace of conia.

When conia and benzoic acid, both in solution in dilute spirit, are mixed in equivalent proportions, the former is completely neutralised, and a solution of acid reaction and destitute of conia odour is formed. Evaporated, dried, and preserved over sulphuric acid, a clear and bright amber-coloured body of the consistence of soft extract remains. It has a faint conia odour and a bitter taste devoid of acridity, and forms with water an odourless solution. This is *neutral benzoate of conia;* the substance itself and its aqueous solution, even when a thousand times diluted, evolve the odour of conia when supersaturated with potash; and this occurs in presence of large quantities of either benzoic acid or benzoate of soda, proving that these bodies in no way interfere with the nasal test for conia. Heated in a test-tube, the benzoate runs, volatilizes, and decomposes with evolution of white fumes, in which the odour of benzoic acid is masked by the more powerful one of conia.

A *superbenzoate* was formed by the addition of two equivalents of the acid to one of conia; the resulting compound resembled the former, except that it was both colourless and odourless, and less readily soluble in water. Attempts to combine more of the acid, so as to produce a dry salt, failed. The reactions of the superbenzoate resembled those of the neutral salt.

Such are the preparations used in the following observations; let us now see what are their relative medicinal values. The patients have been selected on account of their familiarity with the intoxicating effects of hemlock. I have often observed that the same dose of a given preparation of hemlock has a variable effect upon the same patient. This observation is perhaps true in some degree of every drug and of every individual; but with respect to hemlock the variability is often very great. It is, I find, principally, if not altogether, due to two causes; viz. the degree of motor activity of the body, and the rapidity of absorption. With regard to the first of these causes, many persons are aware of a great difference in energy in the morning and evening,

before a meal and after it. Where languor or lack of energy is, there hemlock has a more marked effect. As to the second cause, the sensible effects of hemlock are very evanescent, and therefore when it is given on a full stomach absorption of the drug is often sufficiently delayed to prevent that rapidity of action which results in decided physiological effects. The action of the drug, moreover, is often weakened at the same time by the increase of liveliness and energy which are the immediate results of good digestion.

I have eliminated these interferences with the correct estimation of the value of the preparations employed: firstly, by giving the medicine in a particular case at the same hour of the day and at the same interval between meals; and secondly, by watching the effects of graduated doses, and as soon as an appreciable effect was induced, repeating the dose two, three, or more times.

The effects are briefly described as "slight," "moderate," and "full." The following is the value which I have given to these terms :—

Slight = haziness of vision and faint diminution of muscular power, rendering ordinary muscular exertion rather fatiguing. Duration about twenty minutes.

Moderate = mistiness of vision, a sensation of pressure upon the eyelids, distinct muscular weakness, especially referred to the hamstrings and muscles of the arms, with inability to walk fast. Duration from 30 to 45 minutes.

Full = confusion of vision, giddiness, tottering gait, extreme languor, and inability for continued muscular exertion, inducing the patient to sit or lie down and close the eyelids. Duration from 30 minutes to 1½ hours.

1. Anne B., æt. 27, a weakly, hysterical woman.
   Extracti conii (P. B.) gr. xx repeatedly caused slight effects.
   Succi conii (P. B., prepared by Buckle, 1866) f. ʒiij caused on several occasions full effects, with ptosis and partial paralysis of the arms and legs lasting half an hour.
   Relative value—gr. xx extract = f. ʒij succus.

2. George G., æt. 24, a nervous, hypochondriacal young man. Took the extract or juice every second or third night for a period of four months.

Extracti conii (P. B., prepared by Messrs. Bell and Co., 1867 and 1868) gr. xl caused slight effects, and gr. lx moderate effects.

Succi conii (P. B., Buckle's, 1866 and 1867) f. ʒiv caused slight effects, and ʒvj moderate effects.

Relative value—gr. xl of extract invariably = f. ʒiv of the succus, and gr. lx of extract invariably = f. ʒvj of the succus.

3. Joseph B., æt. 44, the subject of paralysis agitans, and very weakly.

Extracti conii (P. B.) gr. xlv caused slight effects.

Succi conii (P. B.) ʒiv to ʒv caused slight, and ʒviij moderate effects.

Tincture of green fruit (American, ʒivss of fruit yielding f. ʒx) ♏80 were required to produce a slight effect.

Relative value—gr. xlv of extract = ʒivss of succus, and ♏80 of the tincture.

4. Mary P., æt. 50, a strong woman, afflicted with partial paralysis agitans.

Took 45 grains of fresh extractum conii (P. B., the same preparation as that used in Case 3) twice a day for several weeks, and at times ♏20 Squibb's fluid extract of the green fruit; but no physiological effects were ever produced by either preparation.

5. Emma G., æt. 15, the subject of chorea, a strong, well-developed girl. Took gr. xl extracti conii (P. B., the same preparation as that used in Cases 3 and 4) once, and latterly twice a day for several weeks, without experiencing the slightest appreciable effect.

6. Ann P., æt. 44, suffering from spinal atrophy and excessive debility. Required gr. xx of the same extractum conii to produce slight effects.

7. Benjamin O., æt. 30, affected with incomplete paraplegia. Required gr. xx extracti conii (P. B., Bell's, 1867, same as Case 2) to produce slight, and gr. xxv moderate effects.

8. George G., æt. 20, a rather weakly but active epileptic youth.

Succi conii (P. B., Buckle's, 1866) ʒiv induced slight symptoms = ʒivss of the tincture of green fruit (American ʒiiss fruit to ʒxx).

9. Mary L., æt. 36, able-bodied, the subject of ovarian pain.
   Succi conii (P. B., Buckle's, 1866) ℥iv caused slight effects.
   Tincture of the green fruit (London, ℥v in ℥xx), ♏50 slight, ♏60 moderate, and ♏90 full effects.
10. John M., æt. 23, a delicate and nervous young man.
   Extracti conii (P. B., Bell's, 1868) gr. xl induced slight, and gr. lxxx full effects.
   Succi conii (P. B.) ℥iv taken in the morning fasting caused slight effects; in the evening, when he was more active, ℥v were required to produce the same effect.
   Relative value—40 grains of the extract = f. ℥iv of the juice.
11. George W., æt. 17, a robust epileptic youth.
   Succi conii (P. B., Buckle's, 1867. The plant yielded 75 per cent. of juice) ℥vj caused slight, and ℥ix full effects.
   Succi conii (P. B., Allen and Hanbury's, 1865. The plant yielded about 35 per cent. of juice) ℥iij produced full effects.
   Relative value—℥ix of the one = ℥iij of the other.
12. Mr. E., æt. 19, a moderately strong young man.
   Extract of the green fruit (American) gr. iij: slight effects.
   Tincture of the green fruit (American, ℥iiss to ℥xx) ℥iv: slight effects.
   Succi conii (Buckle's, 1867) ℥iv slight, ℥vj moderate effects.
   Relative value—3 grains of the extract = f. ℥iv of the tincture = ℥iv of the juice.
13. John H., æt. 36, an active young man.
   Succi conii (P. B., Buckle's, 1860) ℥ivss taken before breakfast induced moderate effects.
   Extract of the green fruit (London) gr. iij taken before breakfast produced equal effects.
14. William W., æt. 20, strong and healthy.
   Squibb's fluid extract ♏50 (= 50 grains fresh green fruit) caused slight, and ♏60 moderate effects.
   Tincture of the green fruit (London) ℥iss (= 23 grains fresh green fruit) induced slight, and ℥iij full effects.

Succi conii (B. P., Buckle, 1866) ℥iv (= half an ounce of fresh plant) caused slight, and ℥vj moderate effects.

Deane's tincture of the fresh plant ℥iiiss (= 2·1 drachms of fresh plant) caused slight, and ℥v moderate effects.

Deane's tincture of the dry plant ℥j caused slight, and ℥iss moderate effects.

Clarke and Co.'s fluid extract f. ℥iiiss (= 14 drachms of fresh plant) caused slight effects.

Relative value—♏50 Squibb's f. e. = ℥iss tincture green fruit = f. ℥v succus = ℥iiiss to ℥iv Deane's tincture of fresh plant = f. ℥j Deane's tincture of the dry plant = f. ℥iiiss of Clarke's fluid extract.

15. C. Jane L., æt. 8, a delicate but very active child.

Squibb's fluid extract ℥j : slight effects.

Succus conii (P. B., Buckle's, 1867) ℥vj : slight effects.

Succus conii (P. B., Allen and Hanbury's, 1865) ℥iiss moderate effects.

Tincture of the green fruit (London) ℥ij : moderate effects.

Deane's tincture of the fresh plant ℥iv : slight effects.

Neutral benzoate of conia = 0·75 gr. conia : slight effects.

Relative value—℥j Squibb's f. e. = ℥vj pale succus = ℥ij of dark = ℥iss tincture of green fruit = ℥iv tincture of the fresh plant = ¾ gr. of conia neutralized with benzoic acid.

16. Alfred L., æt. 22, a healthy but nervous young man of moderate strength.

Squibb's fluid extract ♏40 induced slight effects.

Tincture of green fruit (London) ℥iss slight, ℥ij moderate, and ℥iiss full effects.

Succus conii (P. B., Allen and Hanbury's, 1865, dark) ℥ij slight, and ℥iij full effects.

Succus conii (P. B., Buckle's, 1866) ℥iv slight, and ℥vj moderate effects.

Deane's tincture of the fresh plant ℥iij to ℥iv slight effects.

Tincture of green fruit (American, ℥iiss to ℥xx) ℥iiiss slight effects.

Clarke's fluid extract ℥iiiss slight effects.

Relative value—Agrees closely with Case 14.

17. John J. H., æt. 20, a healthy young man of moderate strength.

Extract of the green fruit (American) gr. iij caused slight effects.

Squire's extract gr. lxx caused slight, and gr. lxxx moderate effects.

Squibb's fluid extract ʒj caused moderate effects.

Succus conii (P. B., Buckle's, 1867) ʒiv slight, and ʒvj moderate effects.

Deane's tincture of the fresh plant ʒiv slight, and ʒvj moderate effects.

Deane's tincture of the dry plant ʒviij caused slight effects.

Clarke's fluid extract ʒiij caused slight effects.

The comparative effects in this case agree very closely with those of Cases 14, 15, and 16.

18. Samuel M., æt. —, a robust man afflicted with neuralgia of the face.

Succus conii (P. B., Buckle's, 1867) ʒvj caused moderate effects.

Benzoate of conia = half grain of conia produced equal effects.

A sufficient number of instances having now been given to enable us to form a positive conclusion as to the relative efficacy of the several preparations of hemlock, and as the evidence requires no further analysis, I shall conclude this communication with such general remarks as the foregoing results necessarily suggest.

1. The advantage of the green fruit over every other part of the plant is so clear and decided, that nothing need be said in favour of its selection as the basis of the tincture and extract. The extract of the Pharmacopœia is a scandal to the present state of medical knowledge, and a spirituous extract of the green fruit ought as soon as possible to take its place; then indeed we shall have an extract of which the proper dose will be "from 2 to 6 grains," instead of from 20 to 60 grains or more, which is the efficient dose of the present extract.

2. The variability of the strength of the succus must prove a

serious drawback to its use, but this doubtless would be in great measure removed if hemlock were regularly cultivated for medicinal use in fixed localities. At present we are wholly dependent not only upon the wild plant, but upon the collectors, who, in order to be the first in the field, gather the plant as soon as it makes the least show of flowering, instead of allowing it to remain until the fruit begins to form, as is very properly directed in the British Pharmacopœia. Juice made from plants in this stage would have such activity that ʒij or ʒiv would be a powerful dose, whereas it is often necessary to give from one to three ounces or more of the watery succus prepared from the flowering plant; and this leads me to another matter, viz., the expensiveness of the succus, and I heartily second Mr. Berry's objections on this score.[1] Indeed I cannot do better than quote from a letter of a patient of mine. He says: "From the 4th of October till the end of the month I took the conium regularly every day, omitting a day now and then, and at the end of that time I had to take two and a half ounces to produce the desired effect, and my general and local health seemed much improved. From the remaining part of the term till December I took the medicine in doses varying from two and a half to three and a quarter ounces every three or four days. I took the conium in these large doses up to the end of January, and then I had to take nearly four ounces to produce the effect. . . . I can hardly afford to take the conium. Doses of three or four ounces are so frightfully expensive." This is a discredit to pharmacy, for hemlock is the rankest of our native weeds, and by an abundant yield of juice would well repay the room required for its growth —cultivation it requires none. If our pharmaceutists remain blind to their interests, medical men must help themselves, and annually rear a dozen plants in some waste spot of their garden. These will yield them a pound of green fruit, from which, with a very little trouble, may be made *a tincture* stronger than any juice that can be produced, and *an extract*, of which three grains would produce decided effects in most persons.

[1] See *The Practitioner*, vol. iii. p. 283.

SOME NOTES ON HOOPING-COUGH, AND THE EFFECT OF CHLORAL HYDRATE IN THE TREATMENT OF THE SECOND STAGE.

BY FREDERICK WATERHOUSE, M.R.C.S.

AITKEN says that the origin of this disorder "appears to have been comparatively of no very distant date, Sprengel not having been able to trace it beyond 1510, when it was endemic in Paris;" but in the fourth edition of Good's "Study of Medicine" we find (vol. i. p. 451)—"The Greeks denominated this disease *Bex theriodes* (θηριώδης), which the Latins translated literally, *Tussis ferina*, 'wild or untameable cough.'"

It is much to be desired that a careful microscopic examination of the pulmonary mucous membrane and its secretion should be made by an experienced histologist. In the absence of the direct testimony that might thus be obtained, a correct appreciation of the phenomena observable in hooping-cough would warrant us, I believe, in considering it as a disease whose inception is due to the inhalation of a specific disease-germ or miasm. This either finds a convenient nidus in the minute air-tubes and cells, and there develops and prolificates, or, less probably, is absorbed, and, after a period of incubation, there evolved, giving rise to febrile symptoms (the catarrhal stage). Subsequent irritation, and thereby reflex action, of the peripheral branches of that part of the vagus extending to the ramifications of the bronchi are thus caused. As the febrile disturbance subsides, attempts are made to expel the morbid products by violent paroxysms of spasmodic contraction of the entire system of expiratory muscles, even to the tonic spasm of the circular fibres of the ultimate bronchial tubes. Reflex spasm of the glottis is produced, which causes the characteristic hoop.

Under this theory all the symptoms and post-mortem appearances become easily explicable, whether we regard the disease-germ as "animalcular" (Linnæus), or "a peculiar miasm" (Good), or, in a modern technology, a specific microzyme. That the pneumogastrics should occasionally be found inflamed and indurated is not at all singular, when we consider the irritation and consequent exaltation of function to which they have been subjected, and it is surprising that this effect should not have been more frequently observed. We can also readily understand why no sound is heard in the chest during a fit of hooping-cough, and why, though air enters during the hoop with great velocity, none penetrates the minuter bronchi. Further, the post-mortem condition presented by the lungs is shown to be the result of the complete contraction of the air-tubes (Alderson and others), and not of collapse, with which some modern writers still confound it. Collapsed lung is more voluminous and less dense than the atelectasis of hooping-cough. The fact that reflex spasm of the glottis occurs seems to indicate the presence of other foreign matter than the mucous secretion.

The indications of treatment in this disease therefore, when uncomplicated and after the hoop has been developed, will be: (1) to mitigate the severity of the paroxysms; (2) to husband the child's strength; (3) to destroy or arrest the development of the morbific germs; and, lastly, to restore tone to the debilitated air-tubes.

We may at once dismiss the idea that the hydrate of chloral is specific in this disease; it is certainly not that effective remedy which Dr. West anticipates will "some day or other cut short its course with as much certainty as quinine arrests an intermittent fever." But for the first indication of treatment it is invaluable. During a recent epidemic I have used it extensively, and of eighteen cases, the notes of which I have preserved, four were treated with sulphate of zinc and hyoscyamus or belladonna; five with chloral alone; and nine with chloral and sulphate of zinc. Of the four, two became complicated with pneumonic symptoms, but recovered; one which was teething had convulsions, and died, the other got well in the usual time. Of the next five, four ran an average course and recovered, paroxysms being less severe and frequent when taking

the chloral than when it was occasionally omitted; the other had bronchitis *ab initio*, and died in the fourth week. Of the nine cases treated with chloral and sulphate of zinc, one had severe diarrhœa in the fourth week, which yielded to bismuth; another, after taking chloral eight days, had pneumonic symptoms, which passed off in four days after the chloral was omitted, and recovered in the tenth week, after spending an hour a day for three days in a chemical works. Two had febrile symptoms from teething, but did well, and, with the remaining five, recovered between the sixth and the tenth weeks.

The treatment by chloral and zinc sulphate is illustrated in the following case:—

July 16th.—Minnie M——, aged 4 years, an only child; good constitution, but occasional gastric derangement from over-indulgence. Fifteenth day from commencement of catarrhal stage; hooped eight days; very little functional disturbance, but very cross and restless; no appetite; no râles; has never had bronchitis; coughs every hour in the day, oftener in the night, so much so that she did not sleep at all last night. Prescribed—

℞ Chloral. hydrat. gr. v.
Syrup. ℥ss.
Aquæ ℥ss—omne nocte sumend.

℞ Zinci sulphat. gr. v.
Glycerini ℥ss.
Tinct. cardam. co. ♏ x.
Aquæ ℥ss—omne mane sumend.

17th.—Coughed four times in the night; slept during the intervals; vomited half a pint of liquid after the morning draught; seemed much relieved and lively, though occasionally drowsy.

19th.—Coughed three times last night and three times to-day up to 4 P.M. Still drowsy; slight râles in both lungs; zinc not acted so freely as at first; bowels constipated; ordered a jalap purge, and to omit the chloral draught.

20th.—Coughed four times last night; râles gone; paroxysms much less severe than on the 16th; hoop well marked. The chloral draught was now ordered to be given every other night and the emetic the following morning.

22nd, 25th, 29th, and *Aug. 1st.*—The child in good health in every respect except the paroxysms, which occurred about three

times in the night and four in the day. Discontinued the medicine, and ordered a drive out every fine day.

Aug. 4th.—Sent for medicine, as she had passed a bad night last night, having had seven attacks, and one every two hours to-day.

5th.—Better again; draughts ordered every second day as before. These were continued for two weeks, when she was so much better that I sent her to the sea-side. She was quite well in the eighth week.

I have found it unnecessary to give such large doses of chloral as recorded in the *Practitioner* of September; five grains at bed-time for a child five years of age have seldom failed having effect, in fact often keeping it drowsy next day. It seems to have a tendency to accumulate in the blood and cause lung-congestion; a morning emetic, however, generally prevents this and gives much relief to the patient. If the paroxysms are so severe as not to be influenced by the chloral, it is better to assist its action by applying belladonna to the nape of the neck, or by administering hydrocyanic acid, conium, or hyoscyamus, than to largely increase the dose. It must be used with the greatest caution if pneumonic symptoms present themselves. Chloroform vapour, even when given off whilst swallowing a draught containing chloric ether, will often cause spasm of the glottis, and thus bring on a paroxysm. Chloral hydrate has not this disadvantage.

The third indication, to destroy or arrest the development of the morbific germs, is a subject which demands a considerable amount of inquiry. I know several chemical works, the atmosphere around which seems to possess decided curative effects. The vapour from carbolic acid and boiling water gave much relief to a child whose father had administered it after seeing a paragraph in the *British Mechanic*, advocating its efficacy in pulmonic affections. It certainly deserves a trial.

A pure and bracing air is the best remedy to restore tone to the air-tubes. Cold baths have also much tonic power on the debilitated nerves.

A NEW OPERATION FOR NÆVUS.

BY G. H. BRANDT, M.D., OPORTO.

My object in bringing before the profession the following observations is chiefly to show that in some cases in which all the methods hitherto advised for curing this disease are not practicable, a very simple method has produced a perfect result. This method, although not entirely a new one, has not been so much practised as it ought to have been, owing to the danger of causing immediate death, which, unfortunately, has already happened on more than one occasion,—I mean the injection of the tincture of the perchloride of iron by means of a Pravaz syringe. It is, of course, recommended to compress the vessel or vessels in order to prevent a clot from finding its way to the heart; this is often a difficult thing to manage, according to the situation of the parts affected. The instrument I have devised obviates this difficulty, and renders the operation a safe one.

The subject of this disease is a young lady, aged 16, of charming appearance as regards one side of her face. She was born with a venous erectile tumour occupying the whole of the inside of the right cheek; there was considerable disfigurement of that side of the face, with difficulty and fear of mastication, and at times, when congested, part of the tumour would bulge out and protrude through the mouth, presenting a fearful appearance; the other half of the face was, and is, really beautiful. Passing in review the different methods employed by different authors for the removal of this unsightly disease, I had to put aside the ligature, the escharotics, the actual cautery with Wordsworth's needle, and the piecemeal extraction proposed by Jordan; the injection with the tincture of perchloride of iron remained. As it would have been almost impracticable to compress the large vein, I devised an instru-

ment on the principle of the Entropion forceps. The cheek is passed between the two blades of the instrument in such a way that the flat blade rests against the outside of the cheek, and the fenestrated plate applies itself against the tumour internally; a few turns of the screw makes the two blades approach each other in such a way that part of the tumour bulges through the ring-shaped inner blade, and compresses it to such an extent that no communication can take place either in or out of that part of the tumour. I then inject five drops of the tincture at 30° and withdraw the needle of the syringe; the coagulation of the blood is so rapid that no blood escapes. I allow the instrument to remain in for five or six minutes, and then gradually unscrew and gently withdraw it. This was repeated eight times on different occasions, until the whole of the mass was coagulated. After each injection slight swelling occurred, which was kept down by cold external applications. On two occasions, owing to a slight blow on the cheek, a small opening was made by the tumour (after the injection) striking against the teeth. Through this opening I could see the black hard coagulum, which I easily extracted with a common forceps. The gap closed in two or three days. The inside of the cheek is now as pink and smooth as its opposite neighbour.

The facility with which it is accomplished, and the complete absence of danger and pain, are, I believe, sufficient recommendations for its adoption in all suitable cases. As these clots become hard and encysted, and take a long time to become absorbed, I think it easily practicable to make a small opening and enucleate the clots, as I did on two occasions, when a chance blow made the opening through which I extracted the hard black mass.

CLINICAL REMARKS ON CHRONIC DYSENTERY.

BY HARRY LEACH,

Senior Medical Officer Dreadnought Seamen's Hospital.

DURING the last few years the annals of Anglo-Indian medicine have given us very able and very useful particulars relative to acute dysentery, and have now in some sort elaborated a definite and beneficial plan of treatment as to that disease. But whether from ignorance of the subject, from the unsatisfactory nature of the disease, or from its very usual and very unsatisfactory termination, chronic dysentery has found no place whatever in the leading works on medicine; indeed it appears to be well-nigh ignored. The reason why is not far to seek. Chronic dysentery is a malady that requires far more of persuasive treatment than of tentative therapeutics; and on this account its history, pathology, and treatment is not likely to attract the "practitioner" pure and simple. But it is so far worthy of attention in that, though many cases of this kind do not fall within the range of any one medical man, Anglo-Indians are now pretty liberally scattered about the United Kingdom, the later years of many of whom are clouded to a very great extent by the effects of chronic dysentery. About fifty or sixty cases are treated annually in the Dreadnought Seamen's Hospital, and at least seven-eighths come from the East Indies and China. The duration of the disease has usually ranged from two to thirteen months; their condition is that of intense weakness, great emaciation, with sunken eyeballs, a feeble pulse, and in some instances with slight symptoms of scurvy. The voice is frequently reduced to a whisper, and they pass stools of blood, slime, mucus, and with great tenesmus, varying in number from eight to forty in the twenty-four hours. The brain is clear; physical signs

usually denote healthy and sound lungs, and there is very seldom any indication of renal mischief. But hepatic enlargement is frequently present, and abscess of the liver is always to be suspected. There is great tenderness over the abdomen, usually most marked in the right iliac fossa, and in the situation of the transverse colon. The stools are always more frequently passed at night than during the day, and it is also a noteworthy fact that a decrease of atmospheric temperature usually increases the pain and tenesmus. The pathological appearances, as far as the skull and thorax are concerned, are negative. Of the abdominal viscera the spleen is sometimes enlarged, the kidneys somewhat fatty, and the liver usually large, and very often the seat of abscesses, varying greatly both in size and number. Nothing unusual is observed as to the stomach, and, except in the neighbourhood of the caput coli, the small intestine is healthy. But along the last three or four inches of the ileum, about the ileo-cæcal valve, and throughout the curve of the large intestine, are scattered ragged ulcers with elevated edges, of all sizes, and of varied depth. They have not seldom been seen at the Seamen's Hospital so large and so numerous as to present more square inches of ulcerated than of healthy colour, many of these having entirely perforated the mucus and middle coats of the bowel. The ulcers are generally larger and deeper near the ileo-cæcal valve, and at the sigmoid flexure. Such is the pathology. The statistics of a large number of cases show that about half die from simple exhaustion, and the other moiety from peritonitis, or some secondary affection. Many, however, after a residence in hospital of some six and even ten months, are discharged in a state of comparative health; and hence, though their cases are most tedious to both patient and practitioner, a hopeful prognosis may always be given. It is a familiar fact that temperament always influences treatment, and to no disease can this statement be applied more truthfully than to chronic dysentery. In indicating a plan of treatment, we are able to start with the knowledge that *bonâ fide* ulcers (as genuine as those seen in hundreds of legs in the out-patients' room of an hospital) are scattered about a large tract of the alimentary canal. The resources of the Pharmacopœia have, I believe, been fully and fairly tried in the Seamen's Hospital:

diaphoretics, astringents animal and vegetable, calomel, castor-oil, ipecacuanha, simple and compound, and a host of other so-called remedies have been prescribed, as well as opiates, blisters, suppositories, and enemas, and it is agreed by Dr. Stephen H. Ward, senior physician, and all others who have had practical medical experience in this institute, that failure has been the rule rather than the exception. I ventured, indeed, four years ago (having watched upwards of 200 cases of chronic dysentery), to record that "they who, having lingered the longest, at length end well, are those with whom therapeutics have had little or nothing to do." And so the treatment now consists in enjoining and enforcing, strictly and persistently, rest to the body and to the bowel. Gentle nursing, scrupulous cleanliness, an equally warm temperature are of very great importance. A very bland diet of fluid or semi-fluid food, and no stimulants of any kind, unless prostration be extreme. An occasional dose of castor-oil with a few drops of laudanum may be prescribed, because it relieves tenesmus, and a placebo should be always given, because in such tedious cases it is well to influence the mind in the conservation of the body. The most favourable results can of course only lead to comparative restoration to health; but, in perhaps too totally ignoring drugs, I am sure that much good may be done by nursing and feeding cleverly, rather than physicking and stimulating actively, patients suffering from chronic dysentery.

NOTE ON THE RELATIONS OF MUSCULAR EXERCISE TO UREA AND FOOD.

BY THE EDITOR.

A PAPER by the younger Dr. Flint, in the *New York Medical Journal* for October, has been quoted and commented upon in English medical journals, and will doubtless attract much attention. It bears—though less directly than would appear at first sight—upon what is almost the central problem of the physiology of nutrition, namely, the relations of nitrogen-elimination to "disassimilation" or retrograde metamorphosis of elements of the blood and tissues. As it is probable that both the intrinsic value of these researches and their bearing on the above-mentioned physiological question will be exaggerated and misunderstood by hasty readers, I venture to make a few criticisms upon them.

In the first place, the subject of this inquiry was the effect on urinary excretion of an enormous, indeed altogether unparalleled, stretch of muscular exertion; and there is only a doubtful relationship between the effects of *such* exertion upon excretion, and the effects of any exertion at all within the natural conditions of life. The subject of the experiment *walked* 100 *miles in less than* 22 *hours*, and it is of course impossible to say with any certainty that a totally different chain of disassimilative processes to the ordinary one may not have set in long before the organism reached the state of physiological[1] exhaustion to which it must have been finally reduced.

The broad facts of elimination are stated in the following comparative analyses of the total mixed urine of the day of

[1] *Physiological*, not *sensational*, for it appears that the athlete (Mr. Weston) suffered strangely little of the feeling of fatigue from his unexampled performance.

prodigious exertion, and the urine of another day, some weeks after, spent in Mr. Weston's usual manner—or with rather more rest than usual.

	Great exertion.	Comparative rest.
Urea	463·368 grains	191·400 grains
Chlorine	89·808 ,,	110·880 ,,
Sulphuric acid	73·776 ,,	47·520 ,,
Phosphoric acid (total)	120·600 ,,	31·680 ,,
Ditto (with alkalies)	102·600 ,,	21·120 ,,
Ditto (with earths)	18·000 ,,	10·560 ,,
Uric acid	40·080 ,,	22·440 ,,

The facts, such as they are, speak for themselves; the most interesting being the great increase of urea and uric acid under enormous exertion. But now to our series of criticisms.

1. The quantity of urea eliminated by Mr. Weston on the day of comparative rest is not merely unusually, it is *uniquely*, small; so much so that a strong suspicion suggests itself, that there must have been a large error somewhere, or else that Mr. Weston is a very abnormal person, from whom it would be unsafe to argue as to the probable phenomena in any ordinary subject. Add to this the fact that the amount of uric acid on the rest-day is nearly three times the mean excretion, as gathered from the observations of Neubauer, Beneke, J. Lehmann, Schulters, Neubauer (2nd observation), Becquerel, Böcker, J. Vogel, Kaupp, Genth, Ranke, C. J. Lehmann, Hammond, and Kerner, and greatly higher than any single observer has found.[1] Here, also, there seems to be either great abnormality or serious mistake. The sulphuric acid, also, of the rest-period is enormously high, while the phosphoric acid is particularly low.

2. In order to estimate how far the increase in nitrogenous elements of the urine, during the exertion period, was due to the *food taken*, it was really indispensable that every article taken should have been so analysed as to admit of an exact calculation of this factor in the nitrogen-increase. Nothing of the kind was done.

3. As it is known that great fatigue often much lowers or almost extinguishes the power of assimilating food so as to derive tissue-nourishment from it, so it is quite possible that

[1] See the collective table in Parkes on Urine, p. 12 (Churchill, 1860.)

in this tremendous strain of work every particle of nitrogenous food passed away as urea or uric acid, with only a momentary stay in the tissue juices; and, supposing this to have been the case, we must remember that sixteen eggs, one to two bottles of beef essence, and two bottles of oatmeal gruel contain a *very large* twenty-four hours' allowance of nitrogen, and that on the rest-day Mr. Weston, according to his ordinary wont, consumed but little nitrogen.

4. I must demur altogether to the statement that 463·368 grains of urea, even when supplemented by 40 grains of uric acid, is an "enormous" discharge of urinary nitrogen in proportion to the weight of the body (117 pounds naked). The mean discharge of urea, obtained from the researches of twenty-four observers,[1] is 512·4 grains, and the lowest figure recorded is 286·1 grains; the mean discharge of uric acid, as determined from the figures of fourteen observers, is 8·569 grains, and the lowest figure recorded is 4·32 grains, that have been obtained from subjects weighing no heavier than did Mr. Weston: for Parkes gives the general average, from all the observers already mentioned, of urea per lb. of body weight, as 3·53 grains; and Mr. Weston only passed urea, on the exertion-day, at the rate of 3·96 grains per lb.; Parkes also gives the average of uric acid as 0·059 grains per lb., Mr. Weston only passed uric acid at the rate of 0·342 grains per lb. And there is one more consideration: namely, that Mr. Weston passed *no stool* during his period of strenuous exertion; and, very probably, scarcely any fæculent matter was formed in his bowels; at any rate this is the common effect of a very unusually great and protracted muscular effort. The nitrogen of elimination would go almost exclusively through the kidneys.

Altogether, the conclusion to which I incline is, that there is no proof at all that the altered proportions of the several solid urinary ingredients was produced, to any considerable extent, by the disintegrating action of the severe muscular exertion upon the tissues. Rather, it would appear probable that the whole excess was due to a more rapid passage of the food-elements through the blood, the muscular juices, and finally into the kidney excretion in the shape of urea and uric acid; and that the cause

[1] Parkes, op. cit.

of this more rapid passage was the incessant and powerful demand for muscular force, which was supplied, *not* from changes in the *tissues*, but, almost entirely, from changes in the muscular *juices*, which were continually fed with rich supplies of nutriment.

I cannot quite keep silence, in discussing Dr. Flint's researches, with respect to a matter which is causing pain and trouble of mind to many physiologists and physicians at the present time. I refer to the extraordinary manifesto which Liebig has lately put forward on the subject of the origin of muscular force.[1] The drift of this statement is, that all the experiments of Fick and Wislicenus, and of Frankland (Parkes is not even mentioned, if we remember right), are incorrect, insufficient, and without force; and that practically nothing has been discovered which really disturbs the security of the old Liebigian theory that muscular force results from the disintegration of muscular tissue, and that the muscular tissue must be constantly repaired if the power is to be maintained. Nothing has surprised me more than the complacence, or at any rate the apathy, with which this statement has been received by English physiologists. In Germany Professor Voit has replied to Liebig with crushing force, and we recommend every one who is inclined for the moment to bow to the great authority of Liebig, just to read carefully Voit's paper. For myself, I yield to no one in admiration of the great qualities of Liebig—the veteran of physiological chemistry; but no one ought to pass in silence the late dogmatic manifesto, however humble his position in the sphere of original research, if he has attentively followed the course of the controversy on nitrogenous and non-nitrogenous foods, and the relation of urea to food and disintegration of tissue which has been going on for the last twenty years, more especially in Germany. So far from Liebig's ideas on this matter having prevailed with scientific men, they have notoriously retrograded in esteem, until the general opinion of advanced physiologists is strongly in favour of the belief that a minimum, only, of nitrogen is employed in the work of producing muscular force. As for the bulk of the urea eliminated being the direct product of retrograde tissue-meta-

[1] A translation of this, and some other recent papers of Liebig, has appeare in the *Pharmaceutical Journal*.

morphosis, I venture to say that scarcely one physiologist of importance, except Liebig himself, now holds it. And, as we remarked the other day, it is perfectly amazing that the Liebigian theory should ever have gained acceptance, even temporarily, when proper and careful inquiry would have supplied physiologists with a damning fact—that the Turkish porters, the most powerful men, and the greatest expenders of muscular power in the whole world, probably, live absolutely on nothing but rice and fat!

Reviews.

Essay read before the Medical Society of the State of North Carolina, at the Annual Meeting in Wilmington, May 29th, 1870. By S. S. Satchwell, A.M., M.D., of New Hanover County, N.C.

(*In the "Transactions of the Seventeenth Annual Meeting of the Medical Society of the State of North Carolina."* Wilmington, 1870.)

We are going to take the unusual course of writing a formal review article on the subject of a single paper reported in the Transactions of a provincial medical society; and we believe our readers will admit that we are justified under the circumstances. North Carolina is one of the most important of the Southern States of the Union, and a professed exposition of its medical creed is a matter of no slight consequence. Now the greater part of Dr. Satchwell's address is directed formally against the opinions of Dr. S. Norcom, of Edenton, whose lively defence of modern doctrines against the upholders of an effete antiphlogistic system we briefly mentioned not long since; but in a secondary way it also directly attacks the whole body of therapeutic doctrine which has grown up in England (and it would appear in the Northern States of the Union also), within the last twenty years, respecting the treatment of acute internal inflammations. Dr. Satchwell loudly declares that these doctrines (which he designates, with habitual contempt, the "doctrines of Todd, Bennett, and Co.") are no true result of scientific progress, but the mere arbitrary dicta of a violent and mischievous propaganda which has overrun the world, although the true masters of medical science still, as formerly, reject and defy it and all its works. Now, as far as English medical opinion is concerned, we might well disregard this fiery anathema. But as this journal is not without readers in the Southern States of the Union, we think it of some importance to attempt to show how small is the basis, either in logic or in fact, for arguments which Dr. Satchwell's personal eminence might invest with factitious importance to wavering minds among the younger generation of Carolinians.

One can often judge, by the merest fragment of a man's work, whether he is a workman in the true sense; and of all sorts of work the quality of which most easily betrays itself, there is none so favourable for the application of a speedy and decisive test of its worth, as scientific argument. In Dr. Satchwell's essay single passages abound which are alone sufficient to show the degree of his competence. For instance, we find him using the following pleas against the validity of a statement by Dr. Graily Hewitt, that "nutrition is the basis of the treatment of disease, and no other is possible for a rational system of medicine":—"The plain English of this paragraph, and the (Dr. Hewitt's) whole address, is that disease arises from *inanition*, is always asthenic in type, and always requires the same treatment —'support'—which can only be given by food. This is not only erroneous, but downright absurdity; not only unsupported by facts, but in direct antagonism with facts, and the daily observations of every correct medical observer. Let us give an instance: A man in the vigour of life, after having partaken of a full dinner, and washed it down with brandy and wine, falls from his chair in a fit of apoplexy: shall we give him more food to cure him? Should we attempt to induce him to eat another dinner and drink more wine, or relieve the oppressed brain by bleeding and purgatives, cold applications to the head, &c?" The man who could write such a sentence as that must be incapable of rational argument. Because a man has his stomach full of a meal which has not yet been digested, and scarce one particle of which has been absorbed, are we justified in speaking of his state as one of high nutrition? And would not the most strenuous advocate of nutrition in disease recognize at once that to give more food at such a moment would be effectively to *hinder* nutrition, making it impossible for the stomach to digest and absorb what it had previously taken in? Have not the most earnest upholders of nutrition in disease persistently maintained that though a large total of nutriment ought to be given in nearly all acute diseases, the time and the dose should be chosen with jealous care to avoid even the slightest embarrassment of the machinery by which it can alone be appropriated to the needs of the organism?

Take, also, Dr. Satchwell's abrupt transition to an entirely inconsistent charge against Dr. Norcom. He blames that gentleman (p. 99) for not distinguishing between *sthenic* and *asthenic* inflammation; forgetting the fact that, a few pages before, he was abusing him for citing with approval the view that all disease is a consequence of inanition. Of what use is argument that runs in such a vicious circle?

Like all other advocates of so-called "antiphlogistic" principles who linger in the present generation, however, Dr. Satchwell

finds himself driven, in the last resort, to the refuge of the "change of type of disease" theory. He talks down to the younger generation from the safe vantage-ground of the assertion —impossible for them to absolutely contradict—that they little know the terrible and ferocious inflammations of "strong" type which prevailed in the days of their fathers. Well! we have heard all that story over and over again in this country, and we know pretty well what it means; and what is more, we know that the ablest and most high-minded of those very veterans who at first pleaded the "change of type" most strongly, have now confessed that they were mistaken in their former ideas, and that it is rather the physicians who have changed, than the type of diseases. But, as we said before, the indisputable advantage remains with the conservative party, that they can still assert the existence of facts of which their juniors, from the nature of things, can offer no absolute disproof. The more fortunate, therefore, is it that the *laudatores temporis acti* are obliged, in common decency, to give some account of their own notions as to the physiology of disease; for there, at least, they may be brought to the test of definite knowledge. We have no wish to be disrespectful to older and, very likely, better men than ourselves; but we must confess that a little of that unhallowed joy which irresistibly affects him who finds that his "enemy has written a book," comes into our heart whenever we read the statements of authors of Dr. Satchwell's school, as to the machinery of the inflammatory process, and of the antiphlogistic measures that ought to be applied for its relief. Let us gather a few flowers of the Satchwellian pathology. We find, in the first place, that our author possesses that distinctive "note" of his school, a firm belief in an excited condition of the vessels themselves, in virtue of which they *propel* the blood more actively than usual, in inflammation; and, correspondingly, that he believes general blood-letting to be a grand remedy for knocking this vascular excitement on the head. Again, he says that "on the inner surface of the walls of the dilated vessels colourless corpuscles are said to collect sometimes; but there are no new formations called forth by this change—they already exist in the blood, and when the velocity of the current is materially increased they mingle with the red corpuscles, and are carried along with them. It is not established that stasis is followed by exudation, for the reason that new canals are formed by globules of blood bursting through the sides of a vessel, and forcing a passage for themselves through the cellular texture into another vessel." Again: "It cannot be denied that unless under peculiar circumstances—forming exceptions to the general rule—the action of the vessels is at first greatly and powerfully increased; and it is only when they have been clogged and over-distended

by an excess of blood, and that, too, thinner and more fluid than that which they contain in health, which being no longer able to contract, become passive; but it is not in consequence of injury to the *vaso-motor nerves* of the part. Adhesiveness of the corpuscles cannot, therefore, be correctly admitted as the cause of the distension of the vessels—thereby causing debility—since we only perceive this to occur as a *secondary effect.*" Of the grammar and construction of the sentences above cited we shall say nothing; they speak for themselves. It is of more consequence to remark that they convey ideas which are either confused and mutually contradictory, or, where they are definite and intelligible—as in the theory of local excitement of an assumed propelling power of the vessels themselves—are in flat contradiction with facts which are notorious to every student of physiology and pathology, whose reading on these subjects did not cease fully fifteen years since. There is actually something appalling in the fact that a physician, of sufficient weight and position to be asked to discourse to the *élite* of the medical profession of an important American State on the condition and prospect of pathology and therapeutics in general, proves himself to know nothing, or certainly to understand nothing, of all the work done by Marey, Ludwig, Weber, Helmholz, and half a score of celebrities, as regards the forces of the circulation, nothing of the labours of Lister, Waller, Cohnhein, or Stricker, respecting the local phenomena of inflammation, and nothing of the real position of vaso-motor nerve-pathology. That phrase about the colourless corpuscles being "said sometimes to collect, &c.," is exquisite, in the manifestation of bottomless ignorance of the whole subject in hand which it affords. The joke would be a somewhat grim one, however, if we could suppose that the Satchwellian doctrine were likely to be accepted as the standard of medical faith in the Southern States; for the whole essay before us is one long, dull, fanatic iteration and reiteration, in favour of each of the "heroic" remedies which were most frightfully abused in years only too recent, of the same kind of arguments as we have already cited, intermingled with quotations of everybody, from Hippocrates downwards, who can be cited in favour of antiphlogisticism, and with laboured invective against the whole race of modern heretics. For the Southern practitioners to accept it as a genuine authority on medicine would be nearly the same as if the disciples of Mr. Mill and Mr. Spencer were to desert these teachers, and get their logic out of Albertus Magnus, and their biology out of Marsilius Ficinus.[1]

We feel it necessary to speak of Dr. Satchwell's teaching in terms as strong as these, because no honest criticism of ours

[1] *Id est*, Plato, hashed *à la renaissance.*

could say less. But we should like to conclude this article by adding to our merely destructive criticism some few words of constructive pathology and therapeutics. If Dr. Satchwell and his friends would, for a moment, cease their anathemas on "Todd, Bennett, and Co.," they might hear what are the real fruits of that remarkable advance in our knowledge of pathology which the last few years has seen. And the first thing they would discover is that there is no such brotherhood extant as the Todd, Bennett, and Co., to whom they always refer as if they were a well-known band of conspirators. Instead of this they would discover that not merely some two or three, or half a dozen, physicians, but the great mass of educated and enlightened practitioners in England, and an increasing number in France and Germany, have abandoned the belief that acute diseases can be dominated and subdued by the strong measures which were still fully in vogue up to a period less than a quarter of a century ago. They would find that this change is no mere capricious fluctuation of medical fashion, but rests firmly on the threefold ground of a greatly improved diagnosis of disease by which many ancient fallacies and confusions have been eliminated; of an extension of positive knowledge amounting to a complete transformation of our ideas respecting the forces of circulation on the one hand, and of tissue nutrition on the other; and finally, of an immense aggregate of experience, fairly to be termed crucial, which has proved that a mere expectant treatment, *plus* the improved nutrition which a rational physiology allows them to administer without the old superstitious misgivings, yields results which are far more encouraging than any that were obtained under the "antiphlogistic" system.[1] But they would not find that the result of all this has been to render modern practice either merely negative, or a senseless reaction to treatment which might appear, to a superficial view, the opposite of that which formerly prevailed. They would learn that the very same men who firmly reject the notion of strangling a pneumonia by venesection, or of preventing or removing pleuritic effusion by mercurialism, look with hopeful faith to the establishment of a system of positive therapeutics which shall enable them to combat those *accidents* of disease to which, and not to the normal course of the disease itself, death or secondary organic lesions are usually to be traced. It is to modern heretics, and not to the devotees of orthodox antiphlogistic doctrines, that we owe cod-liver oil, chloroform, bromide of potassium, chloral, amyl, the scientific use of electricity, — in short, nearly every solid and permanent addition to our remedial armamentarium that has

[1] For an excellent demonstration of this last fact, *vide* Rogers on Therapeutics, reviewed in *Practitioner* for Nov. 1869.

been made during the present century. It is to heretics that we owe the whole of our scientific knowledge of the action of alcohol, an agent which, however powerful for good or evil, was not in the least understood, physiologically, by men of Dr. Satchwell's school, who nevertheless *pro*scribed it in acute, and *pre*scribed it in chronic, disease, with a rash self-confidence astounding to reflect upon. And it is for Dr. Satchwell and his sympathisers to consider how far they are wise in assuming towards the younger school, who have done such things as these, the attitude of contemptuous and censorious mentors, or rather of inquisitors, who seem only to lack the power, not the will, to actively suppress the writings of all innovating juniors.

Observations on the Physiological and Therapeutical Effects of Galvanization of the Sympathetic. By A. D. Rockwell, A.M., M.D., &c. &c., and George M. Beard, A.M., M.D., &c. &c. New York, 1870. Pamphlet.

This is a short but not unimportant contribution to a subject, the interest of which is increasing daily. Galvanization of the sympathetic has already produced such important results, and at the same time is still so imperfectly understood, that every qualified observer who adds even a few facts to our stock of knowledge deserves thanks. Drs. Rockwell and Beard have been long known as able and painstaking students of electro-therapeutics, and their present *brochure* is worthy of the attention of the profession.

The principal feature of interest in it is some observations on the influence that sympathetic galvanization exerts on the arterial pulse, which was found to be sometimes accelerated, but usually reduced in frequency by two, three, four, or more beats; thus confirming the results of Schmidt and Eulenburg. There is also interesting evidence as to the action upon the retinal circulation; it would appear that, on the whole, the tendency is towards the production of retinal anæmia after the application is over, but there is sometimes a preliminary hyperæmia, and sometimes not, according to the strength of the current and the relative positions of the electrodes. The observers, with the assistance of Dr. Hackley, have confirmed the observation of Loring as to the enlargement of retinal *veins* under the influence of the current, and proved, experimentally, that this does not depend on compression of the jugular vein by the electrode. They have demonstrated also that *faradic* stimulation of the sympathetic has, on the whole, a similar effect to that of *galvanic* stimulation, but that it is feebler in degree than the latter.

On the Wasting Disease of Infants and Children. By EUSTACE SMITH, M.D. Lond., Physician to His Majesty the King of the Belgians, &c. &c., 2nd Edition. London: J. Walton, 1870.

THE appearance of a second edition of this book, only two years after the issue of the first, has justified the favourable criticism which we passed upon the work and our anticipations of its success. We shall only say a few words about the present edition. Of the two newly added chapters, one consists of a series of directions for feeding, and of a number of carefully arranged dietaries to suit varying circumstances, which will be found very useful. The other new chapter deals with a very important subject—that of chronic mucous flux from the whole alimentary canal, an affection which is extremely obstinate, and by the secondary disorder it sets up frequently gives rise to a mistaken belief in the existence of tuberculosis. One point on which we differ with Dr. Smith is the value, which we think exaggerated, that he sets upon alkalies in the treatment of this mucous disease. We are willing to grant that alkalies occasionally work marvels, but we have not found them so constantly useful or so constantly preferable to acids. He is quite right in his praise of the bitter infusions; in fact, we suspect that when an alkaline and bitter mixture does the greatest good it is often the latter rather than the former element of it that is effective. We observe that Dr. Smith makes no mention of a treatment we have often found extremely useful, viz. the administration of a bitter infusion combined with some wine; either sherry, or, if the flux be considerable, some rather astringent red wine of medium alcoholic strength. The use of this, as the *only* medicine, will be found, we believe, to succeed admirably in many cases. We have much pleasure in again recommending this useful work to the attention of the profession.

Manuel Opératoire de l'Ovariotomie, suivi d'Observations encore inédites qui ont présenté des Particularités exceptionnelles. Par le Dr. KOEBERLÉ et le Dr. TAULE (Strasburg). Paris: F. Savy. Price 1*s.*

THIS is an excellent little treatise, which all English surgeons and physicians who concern themselves with ovarian disease should study carefully. The first part consists of a clear description of the mode of operation practised by Mr. Koeberlé, the great Strasburg ovariotomist; the second part contains a careful analysis of all his cases, including a number previously unpublished, and which brings up his total of operations to 120; the final part consists of a description of certain exceptional peculiarities, noticed in certain of M. Koeberlé's cases, which have not yet been related.

The analysis of the 120 cases, of which 84 recovered and 36 died (mortality = 30 per cent.), is particularly valuable ; this is done by a series of tables, in which the following points are indicated. As regards the presence of *adhesions,* we find that these were found in 86 cases, of which 32 died ; in 34 patients there were no adhesions, 4 of these died. As regards the amount of blood lost in the operation, we find that among the 36 fatal cases the mean quantity was about 21 ounces (lowest 1 ounce, highest 70 ounces) ; in the 84 successful cases the mean loss was $7\frac{1}{3}$ ounces (lowest half a drachm, highest 26 ounces). In reference to this last topic, it may be noted that of the six deaths which are ascribed to simple "exhaustion," the hæmorrhage exceeded 50 ounces in 4 patients ; the other two lost 17 ounces, and less than two ounces, respectively. "Septicæmia" was more or less the cause of death in 15 cases ; "peritonitis," without recorded septicæmia, in 12. "Purulent infection—sudden death," is recorded in one case (embolism ?) ; internal strangulation in another.

There are 9 cases mentioned in which there had been rupture of the cyst and peritonitis before operation ; only one of these was fatal. A number of tables deal exhaustively with many other interesting points, and the authors have had the great merit of enabling the reader to recognize each case in all its bearings, a thing which medical writers so frequently and provokingly forget to do. We have no space for further analysis of this most interesting work, but we especially call attention to the tabulated comparative results of different modes of dealing with the pedicle. Altogether, we may fairly say that we seldom if ever came across a book so densely packed with precious information, condensed to the highest degree, and yet never obscure. Would to Heaven there were a few more such !

Clinic of the Month.

Diet of Typhoid Patients.—In some clinical remarks made at University College Hospital, Sir William Jenner said that in the present day the subjects of enteric fever are made to suffer much more frequently from the effects than from the want of stimulants, which should never in these cases be given before the occurrence of a special indication for their exhibition. With regard to their food, he said it should consist of beef-tea and milk, with occasionally a little farinaceous food; but in order that they should not be altogether deprived of the beneficial effects of vegetable juices, he recommended that portions of vegetable should either be grated into the beef-tea or boiled in it, and afterwards removed by straining. (See *Lancet*, Nov. 5.)

Torsion of Arteries as a Hæmostatic Method.—Mr. John D. Hill, after an historical introduction, gives his personal experience of torsion, which, with Mr. Bryant, he considers may be applied in two ways: 1, by free torsion; 2, by limited torsion. Free torsion: in this method Thierry recommends that the artery should be neither fixed nor drawn out, but simply grasped with a pair of broad forceps, and twisted, without breaking off the end of the vessel; ten rounds in the case of large, six in medium-sized, and four in small arteries being usually sufficient. Fricke says the artery should without violence be drawn out about two-thirds of an inch, but not fixed, lest the twist may extend to the attached part of the vessel. The artery thus held should be detached from the surrounding tissues by a second pair of forceps. Twisting is then to be continued until the end of the artery is torn off, eight or nine revolutions being generally necessary. Limited torsion: in this process Amussat advises that the artery should be drawn out five or six times by means of a pair of forceps with a closing bolt. The vessel is then to be separated from its connections with a second pair of forceps, and held at its fixed point by the latter, while the end is twisted off by the former. Mr. Hill formerly adopted this plan, but from its failing on one occasion, modified it as follows. The artery is first seized with a pair of broad-pointed lock-forceps (one blade being placed within and the other without the vessel), and gently held without tension;

with a second pair of forceps it is then separated from its connections, and fixed just below its point of attachment. The vessel is now twisted till it is felt to break, which generally occurs after the fourth, fifth, or sixth revolution. In young children sometimes seven revolutions are required. Mr. Hill has practised torsion of arteries in upwards of seventy surgical operations without one instance of hæmorrhage, secondary or recurrent. The process of healing was for the most part satisfactory, in some cases complete primary union having occurred, and he thinks it adapted to every kind of operation whether great or small. As compared with ligature its application is more simple and rapid, and should failure occur, as sometimes happens with atheromatous arteries, it does so on the operating table. (See *Lancet*, Nov. 5.)

The Advantages of combining Tonics with Aperients in Chronic Constipation.—Dr. Bell remarks that chronic constipation is exceedingly common both in males and females, necessitating the employment of purgative medicines at intervals of from three to ten days, which generally overacts and causes sinking of the system and depression of spirits, and so weakening the bowels that they will not act again for some time. From a consideration of these facts and many trials, Dr. Bell was led to adopt the following formula:—Socotrine aloes, extract of hyoscyamus, of each 12 grains; disulphate of quinine, 6 grains; sulphate of iron, 4 grains. Make 12 pills. Of these he recommends one to be taken in the afternoon from four to six o'clock. (See *British Medical Journal*, Nov. 5.)

New Method of treating Ulcers by Transplantation of Skin.—Dr. Nelson Dobson gives his testimony in favour of this mode of treating obstinate ulcers, such as result from severe burns, or those chronic ulcers of the leg which crowd hospital out-patient rooms. The plan he pursues differs slightly from that of M. Reverdin. He takes small pieces of sound skin about the size of half a split pea, makes incisions into the granulations, waits till the bleeding ceases, and then inserts the portion of skin, much in the same way as a graft would be inserted into the bark of a tree. He finds that, as a rule, the behaviour of these minute portions of skin in their novel situation is that at about the second day the cuticle begins to separate; that by the fourth day only a faint pale spot marks the insertion, or there may be no evidence of it left at all; by the sixth day a faintly vascular tuft of granulation appears, this becomes glazed and in a few days more the usual covering of cicatrix is formed. The patch is usually circular, and presents slight ridges, bearing some resemblance to a flattened, badly marked limpet-shell. This patch continues to increase in size circularly, until it reaches its

maximum of growth—for it has a maximum of growth. Mr. Dobson has never seen a patch larger than a florin, and perhaps their average growth does not exceed the size of a sixpence. He does not think it necessary or advisable to remove the whole thickness of the true skin for the purpose of transplantation, but it is absolutely necessary to remove more than the cuticle. He usually removes first so much of the true skin as will leave on the surface from which it is taken that white and dotted appearance seen in a horizontal cut into the integument. The operation itself is almost painless. The portion of skin removed looks white, shrivelled, and contracted. He gives the details of a case of ulcer from burn, where the wound was eight inches long and five broad, that had not made a single step towards healing, but which treated in this method was perfectly cured in a little over twelve weeks. He recommends the inner side of the upper arm as a good region for the skin to be taken from, cutting away a portion of the size of a split pea with a sharp scalpel, and dividing it on his thumb-nail into five, seven, or nine pieces, which are then inserted into the cuts with an ordinary sewing-needle. If the granulations are healthy and florid, the portions of skin may simply be laid upon them. Care should be taken that they are not removed with the dressings. (See *Medical Times and Gazette*, October 29, 1870.)

Simulation of Hip Joint Disease by Suppuration of the Bursa over the Trochanter Major.—Dr. Macnab gives the details of two cases of this disease, which present features of interest. In one, a strumous boy, aged eleven, received a blow on the trochanter, which produced pain and swelling, the former disappearing, the latter remaining under treatment. Rest, blisters and iodine externally, and phosphate and iodide of iron with cod-liver oil internally, failed to effect any improvement; and the limb simulated in a marked degree the first stages of morbus coxæ. There is, however, no pain on pressure, or on striking the knee or foot upwards. A splint was applied, and the case looked a doubtful one, originating in periostitic inflammation, and likely to end in caries or necrosis. Two months afterwards, however, the swelling over the hip suddenly became painful. Suppuration occurred; the abscess burst, and speedy recovery followed. In the second case, a married woman, aged twenty-two, without previous injury, became sensible of severe pain in the left hip over the trochanter major. The pain increased, and swelling occurred. Opinions were divided as to the nature of the case, some regarding it as one of deep-seated abscess, the result of periostitic disease in the neighbourhood of the trochanter major and upper part of the femur, others holding it to be an undoubted instance of morbus coxæ. She was treated

with counter-irritation, chalybeates, and cod-liver oil. The hip-joint fixed, but not painful on pressure; slightly flexed on pelvis over the trochanter major, and involving the upper third of the thigh, was a large, tense, acutely painful swelling, and great constitutional disturbance. After deliberation, Dr. Macnab opened the abscess, from which a pint and a half of healthy pus flowed, and recovery soon followed. (See *Lancet*, November 12, 1870.)

A New Digestive.—Dr. Kinkead, of Tuam, suggests a combination of pepsine and pancreatine as a remedy in cases of indigestion. The value of pepsine as a remedial agent in such affections, he observes, is generally admitted. It effects the digestion of albuminous compounds, and probably aids in the digestion of fats, by dissolving the albuminous cell-wall, and so leaving the fat free to be acted on by the pancreatic secretion. This action of gastric fluid on fats suggests what may probably cause fatty indigestion, independent of any functional or organic diseases of the pancreas. For the gastric fluid being deficient in quantity or quality, the albuminous cell-walls of the fat may not be dissolved, the fat cannot be acted on sufficiently by the pancreatic secretion, the cell-wall intervening, and consequently is not emulsified, and cannot be taken up by the lacteals. On the other hand, disease of the pancreas or intestine, functional or organic, checking the absorption of fat, may cause indigestion which will not be cured by pepsine, and in such cases the indications are fulfilled by the addition of pancreatine. (Ibid.)

Radical Cure of Hydrocele by the Seton.—Mr. Henry Smith calls attention to the ancient practice of Pott as having been attended with good success in his hands; in about thirty cases only two suffering from acute inflammation of the sac following the operation, in one of which it resulted from taking a long walk immediately afterwards. Pott's treatment consisted in the introduction of "ten or twelve strings of candlewick cotton," the fluid in the vaginal sac having been previously drawn off by a trocar and canula. He put his patient to bed, and purged him. Mr. Smith remarks that this plan was without doubt unnecessarily severe, and the mode he adopts is simply to puncture the tumour with a common suture needle, armed with a single thread, and having brought the thread out a distance of one or two inches from the point of entrance, it is disengaged from the needle, and the two ends are lightly tied together. He does not tap the hydrocele first, as Pott recommended, for if a pretty good sized needle be used the fluid readily drains away. The patient may, and usually does, go to his ordinary occupation, and at his visit in forty-eight hours the part is considerably swollen; or if this be not the case, inflammation may be excited by moving the threads. In the majority of cases, the threads may be removed

in from eight to ten days. In only one instance has Mr. Smith met with a sufficient want of inflammatory reaction to bring about a cure. (See *Med. Times and Gazette*, Nov. 12.)

Treatment of Nocturnal Incontinence of Urine.—Dr. William Thomson, of Peterborough, *à propos* of Dr. Yeo's treatment of this disease, remarks that a case of a girl, aged twelve, recently came under his care, who had been suffering from it for two years. She looked healthy, not at all anæmic; appetite good; in fact, enjoyed perfect health, with the exception of the frequent desire to pass water, and the inability to retain it during sleep. Dr. Thomson thought hydrate of chloral might prove of service, and accordingly ordered her 15 grains every night on going to bed; to fast from 7 P.M. to the following morning, and to eschew beer and spirits. He did not see her for two days, when her mother informed him she was cured. The very first night she rested well, and did not get up once, instead of four or five times as formerly, besides wetting the bed nightly. She still had the desire to go frequently in the day-time. She was directed to continue the medicine for a fortnight, decreasing the dose to 10 grains. She then discontinued the remedy entirely, and was perfectly well when he last saw her. He records a second and similar case, occurring in a boy aged thirteen, when the same happy result followed the use of the chloral hydrate. He considers this plan to be very simple, whilst it is unattended with the unpleasant effects of belladonna on the vision, &c. When the case is one of habit, the chloral acts by ensuring the bladder and sphincter vesicæ a quiet night's rest, enabling them in a few days to regain their normal tone, and the patient his wonted vigour, so that he may retire to rest without his former dread of a disturbed night, or of awakening in the morning to find he is a defaulter to the laws of cleanliness and health. (See *Lancet*, Nov. 19, 1870.)

The Therapeutics of the Sea-Coast.—Dr. Oliver contributes a paper to the *British Medical Journal* on this subject, with special reference to the north-east coast—Redcar and the Cleveland district. He considers the best and most obvious indication of the beneficial effects of sea-air to be an increase of appetite. He has sometimes observed the appetite to become impaired for a short time after arrival at the coast, as if the primary effects of sea-air were too powerful for the digestive organs, but after a while nature generally restores the lost balance, and often with a rebound in an opposite direction. When sea-air appears to disagree, and in particular when the skin is inactive, he frequently prescribes salt-water baths, and is convinced of their utility. Now and then he has found a very liberal allowance of alcoholic stimulants very useful in apparently counteracting the

over-powerful effects of sea-air, and has met with several persons who have found stimulants a necessity at the coast, but who while inland could do without them. As a rule, he thinks when alcoholic beverages can be dispensed with, much more benefit is derived from the sea-side without them. The cases he thinks best adapted for treatment on this coast are: 1. Convalescents from diseases, as he finds by careful weighing that 80 per cent. of those received into the Coatham Convalescent Home increase in weight shortly after admission. 2. Various diseases of children, especially those associated with anæmia and rickets. 3. Scrofula. 4. Some functional disorders of the nervous system, as hysterical paralysis. 5. Some forms of dyspepsia, especially the atonic form. 6. Debility produced by town life. 7. Degenerative change in the tissues, as in premature old age. The cases that are unsuitable he believes to be: 1. Those suffering from an irritable and dry condition of the bronchial tubes, whether coexisting or not with disease of the lungs. 2. Inflammatory skin affections, especially of the scaly variety. 3. Cases of tubercular consumption, in all stages of the disease. 5. Cases of Bright's disease, who should avoid the dry climate of the north-east coast during the winter and spring. (See *British Medical Journal*, Nov. 19, 1870.)

Extracts from British and Foreign Journals.

Action of certain Diuretics.—Dr. F. B. Nunneley contributes a paper containing an account of some experiments made on himself, with the object of ascertaining the influence of citrate and acetate of potash, of sp. ætheris nitrosi, and of oil of juniper on the water, urea, and solids of the urine *in health*, and draws the following conclusions:—1. Citrate and acetate of potash only slightly increase the quantity of water excreted by the kidneys. 2. They distinctly lessen the amount both of urea and of solids excreted. 3. Spiritus ætheris nitrosi slightly increases the amount of urinary water. 4. It decidedly reduces the quantity both of the urea and of the solids. 5. Oil of juniper slightly reduces the amount of water excreted. 6. It appreciably increases both the urea and solids. It would thus appear that of these four remedies citrate and acetate of potash and nitrous ether actually *reduce* the urinary solids, whilst they slightly increase the water; and that oil of juniper *increases* the solids, whilst it slightly lessens the water. (*Med.-Chir. Trans.* 1870.)

Antiphlogistic value of Ergot.—In a paper read before the New York Medical Journal Association, Dr. Jacobi remarks that there can be no doubt that ergot acts through the nervous system, and especially through the sympathetic upon the unstriped muscular tissue under its control. Thus it is that ergot produces its peculiar effect upon the muscular tissue of the uterus, the unstriped fibres of the bladder, the muscular layers of the intestines, and especially upon the muscular coat of the blood-vessels. Its power in diminishing the size of the blood-vessels is manifest from its value as a hæmostatic, and it is this power that must be considered in regarding its antiphlogistic effect. This effect he considers is noticeable in fevers generally, and particularly in fevers of the intermittent type, and hence many cases of obstinate intermittent fever will, when no longer benefited by quinine or arsenic, still be benefited by the action of arsenic. Dr. Jacobi states he has also given a mild preparation of ergot with a uniformly beneficial result in many cases, not uncommon in women and children, of spinal meningitis, evidenced by pain in the spine, slight fever, occasional convul-

sions, and partial or total paralysis. He has given it advantageously in cases of infantile or dental paralysis, dependent upon congestion of the spinal cord. In these cases improvement usually commences immediately after the disease has set in, proceeding rapidly for four or five days, slowly for four or five days more, and then stopping. The persistence of the disease he attributes to dilatation of the blood-vessels, and he gives the ergot to effect their contraction. In cases of St. Vitus's dance, not connected with rheumatism, but with pain in some part of the spinal column, ergot is often serviceable in removing the symptoms. He uses large doses, as a scruple (to an adult), of Bonjean's ergotine, or two drachms (to a child) of Squibb's fluid extract of ergot. He has no fear of gangrene resulting from the use of the ergot. (*The Medical Record*, Oct. 1, 1870.)

The Treatment of Large Wounds.—Dr. Lender observes that in large barracks the chance of the smaller evil of rheumatism is preferred to the greater one of septicæmia; but this is not always practicable, and he suggests the following plan to prevent the putrefaction of wounds in badly ventilated apartments:—In the case of an amputated limb a caoutchouc sac should be drawn over the extremity of the stump, the neck of the sac folded back and bound tightly to the limb with a strip of the same material, which will render the whole air-tight; a tube, guarded by a valve, should be attached laterally to the sac, and by means of an air-pump the whole of the air may be removed. (? Would there not be risk of hæmorrhage?) Its place may then be supplied by oxygen or ozone. The whole apparatus may be obtained from Blumberg, 23, Potsdamer-strasse. (*Berliner klinische Wochensch.* No. 36, 1870.)

On the Local Treatment of Syphilitic Mouth, Nose, and Throat Affections.—According to the experience of Von Sigmund, the local treatment of the mucous membrane of the mouth and nose is of the greatest importance in syphilis. No complete cure can take place without local treatment; whilst, on the other hand, by systematic purification, the still healthy membrane can be preserved from contamination. Von Sigmund recommends consequently that the oral and nasal passages should be thoroughly cleansed every morning and evening, by the injection of cold water into the latter and by free gargling of the former. If slighter affections are present, he recommends, as a gargle and injection, solution of alum and extract of rhatany, in the proportion of about 1 to 100 of water, or of sulphate of zinc of half that strength. In cases of erosion of the membrane he applies concentrated solutions of nitrate of silver, or, still better, of perchloride of mercury, in the proportion of 18 parts to 400 of alcohol, painted over the affected part with a brush; the

latter producing a less constringent effect upon the skin. After the application, which should be made before going to bed, a little finely carded cotton-wool should be placed on the part. A piece of blotting-paper saturated with the solution may also be applied. He recommends the sublimate also in diseases of the gums. Where the tongue is affected, attention should be paid to projecting angles and rough edges of the teeth, which should either be removed or rendered smooth by covering them with caoutchouc. (*Wiener Med. Wochenschrift*, Nos. 32 and 34, 1870.)

Styptic Wool.—Dr. Ehrle, of Isny, in the interest of his countrymen wounded in the war, desires to make known a very simple preparation of wool that he has found very serviceable in arresting hæmorrhage after operations or from wounds. To prepare it, he boils the finest carded wool for half an hour or an hour in a four per cent. solution of soda, then thoroughly washes it out in cold spring-water, wrings and dries it. The wool is thus effectually purified, and is now capable of imbibing fluids uniformly. It is then to be dipped two or three times in fluid chloride of iron, diluted with one-third of water, expressed, and dried in a draught of air, but not in the sun or with the aid of a high heat; finally it is carded out. So prepared it is of a beautiful yellowish brown colour, and feels like ordinary dry cotton-wool. As it is highly hygroscopic it must be kept dry, and where required to be transported must be packed in caoutchouc or bladder. Charpie may be prepared in the same manner, but it is not so effective as cotton-wool, as its texture is not so fine, and consequently does not afford so good a surface for producing coagulation. When the wool is placed on a bleeding wound it produces moderate contraction of the tissue, coagulation of the blood that has escaped, and progressively coagulation of the blood that is contained within the injured vessels, and thus arrests the hæmorrhage. The coagulating power of the chloride of iron is clearly exalted by the extension of its surface that is in this way effected. The application of the prepared wool is not very painful, whilst by withdrawing the superfluous discharge and preventing its decomposition, it seems to operate favourably on the progress of the wound. The unpleasant secondary results which have led many practical surgeons to discard the use of the perchloride of iron do not occur with the wool when it is properly applied. In cases of wounds, when the bleeding is from large and deep-seated vessels, it may be used as a compress, a bandage being applied over it, or the wound may be plugged with it. It may also be employed with advantage in cases of profuse suppuration to suck up the discharge and purify the surface. He recommends that a small

portion should be given to every soldier on going into action. (*Berliner klinische Wochenschrift*, Sept. 12, 1870.)

Internal Œsophagotomy in Cicatricial Contractions of the Œsophagus.—M. Trélat describes a case of stricture of the œsophagus, resulting from the action of a corrosive liquid that had been swallowed, and in which the mode of treatment by gradual dilatation had long been employed in vain. The stricture was immediately above the cardia, and he at length determined to employ an instrument he had previously invented and delineated, and which consisted of a slightly curved shaft, about twenty inches in length, which towards its lower extremity presented a dilatation flattened on one side. Below this were two cutting blades that could be made to protrude to the desired extent by means of a screw. The dilatation was forced through the stricture, the concealed blades thrust forth, and the instrument was then withdrawn. (*Bulletin de l'Académie de Médecine*, t. xxxv. p. 241.)

Therapeutic Value of Perchloride of Iron and Manganese.—G. Marcacci publishes the history of thirteen cases, in which the local application of a dilute solution of the above salt proved serviceable. Amongst these cases are five of necrosis of different bones, produced by different causes; a deep fistulous ulcer in the inguinal region, apparently communicating with the lower segment of the colon; six hydroceles, either simple or complicated with tumour of the testes; and a case of dropsy of a hernial sac. In all the cases a rapid cure was effected. In the case of ulceration the solution was applied once a day, or more seldom, according to the degree of irritation produced. In seven of the other cases it was injected in the same manner as iodine and with about the same effects. He believes that the solutions of this salt destroy unhealthy granulations in fistula, and induce the formation of healthy granulations prone to heal; in the case of the necrosed bones it facilitates the separation of the dead from the living bone. In hydrocele and similar conditions, it provokes reaction, leading to the obliteration of the sac, without causing much pain or too violent inflammation. (*Rivista Scientifica*, 1870, p. 85.)

Ergot versus the Tampon in Puerperal Hæmorrhage.—In a paper with this heading Dr. Battson, of Claremont, Illinois, endeavours to show the superior efficacy of the ergot over the tampon in the treatment of uterine hæmorrhage, accidental or unavoidable; in the earlier periods of gestation as presaging abortion, or in the latter months as foreboding premature delivery. The drug has long been in use for the purpose of increasing both the strength and duration of the muscular

efforts of the uterus in parturient women; but he believes no obstetrical writer has ever yet thought of using the ergot for the arrest of uterine hæmorrhage *before* the delivery of the child, which has doubtless arisen from the fear that it would necessarily excite contractions of the uterus and prematurely expel the ovum. He, however, is disposed to think that, in addition to its parturient and hæmostatic properties, it is endowed with the additional power of *suspending* uterine contractions under certain circumstances, that is, when the contractions are preceded and caused by the escape of blood into the cavity of the uterus. Here the ergot, by its hæmostatic properties, at once arrests the hæmorrhage, and the cause being now removed, the contractions, for want of a stimulus, cease to recur. Thus the impending abortion is at once averted, provided that the os uteri is not *irrevocably* dilated from the sedative effects of the pre-existing hæmorrhage. In regard to the *modus operandi* of ergot, he does not agree with Cazeaux, that the cessation of the flooding is always a necessary consequence of the uterine contractions, nor can it be said to possess astringency. It may possess a tonic power over the patulous orifices of the different vessels from which the blood escapes; it may possess the power of coagulating the blood in the distal extremities of the uterine vessels; or still more likely, it may effect a *stasis* of the uterine blood by its sedative influence upon the general circulation. When the tampon was originally introduced by Leroux it was eagerly adopted and applied with little discernment, and little thought was taken of the irritation its presence occasions to the uterus. In placenta previa, in the treatment of which it is generally recommended, he regards it as an unwarrantable and unscientific procedure to confine the extravasated blood within the cavity of the uterus. It is impossible to apply the tampon to the whole territory of the placenta at once, and, whilst a few bleeding orifices may thus be compressed, the uterine contractions may be separating other portions of the placenta, thus exposing new vessels to keep up the hæmorrhage. (*Medical and Surgical Reporter*, No. 700, 1870.)

Treatment of Herpes Zoster by means of Continuous Currents.—M. Picot gives the following case, in which continuous currents of electricity effectually cured the attack of herpes. A woman, aged forty-five, suffered from acute pain in the left breast, which was most severe at night, six weeks before she was seen by M. Picot; after three days, small vesicles appeared, which dried up in the course of a fortnight. The pain, which also affected the vertebral and sternal regions, however, still continued, and a second crop of vesicles made their appearance. On examination, M. Picot found a considerable number of

vesicles between the fourth and seventh ribs. The treatment he recommended was the application of a constant current, the positive pole being placed upon the cervical vertebræ, and gradually brought down to the first dorsal vertebra; the negative upon the painful points, and along the whole length of the affected nerves. The current was allowed to act upon each nerve for ten minutes; after the first application the painful region was diminished in extent, the exacerbations were less frequent, shorter, and less intense, and the sleep was no longer disturbed. The number of elements employed in the first instance was 15; but subsequently 20. After the fifth visit the pains had completely disappeared, and no further inconvenience was experienced. (*Gazette des Hôpitaux*, 1870, No. 96.)

Treatment of Pneumonia.—Dr. Waters, of Liverpool, gives an account of 59 cases of acute pneumonia, of which only two died. The treatment he adopts is not characterised by the exhibition of large doses of any of the so-called antiphlogistic remedies; he never withholds nourishment from the patients when they can take it, and does not resort to powerful purgatives. On the other hand, he frequently prescribes stimulants at an early period of the disease, and they often form the main therapeutic agent on which he relies. In none of the cases did he resort to venesection; and only in five to cupping or leeching, which he thinks is not often necessary. He is of opinion that, although it is highly probable that a large number of cases of pneumonia would end in recovery if the patients were merely confined to bed and properly dieted, there cannot be the slightest doubt that even in such cases the duration of the disease may be shortened and the convalescence from it hastened by the judicious use of therapeutic measures. He does not believe we have any remedy that is specially or specifically curative of pneumonia; and although antimony has been much vaunted and largely used, the cases are few in number in which it will be found useful, and that a prolonged administration of it in any case is not only unnecessary, but injurious whenever the drug produces a depressing effect, and gives rise to sickness or purging. With regard to the propriety or impropriety of administering alcohol, no definite rule can be laid down, but this must be decided from the general features of each case. Mercury, as a purgative, may be useful, but if given in frequent doses, or with a view of producing salivation, its effects will generally be found more or less prejudicial. The exhibition of opium when pain and distressing cough exists, is, he thinks, very desirable. He frequently gives ipecacuanha and stimulants in the pneumonia of children, and the administration of the same drug with carbonate of ammonia and chloric ether has a

good effect. He does not, as a rule, prescribe salines, such as the citrate of potash or acetate of ammonia, though he admits they may allay thirst and promote the activity of the secretions. He often gives bark, with ammonia and spirits of chloroform, in the early stages of pneumonia, and quinine as soon as the acute symptoms have subsided. In regard to food, the quantity in the early stages may safely be left to the desire of the patient. As the case progresses the diet should be more liberal, and as soon as convalescence is established, solid food will be borne. Lastly, in reference to counter-irritation in the early stages, a mustard poultice, or some other mild counter-irritant, followed by the application of large hot linseed-meal poultices, act beneficially; and later in the disease blisters are often useful. It is not desirable, however, to blister severely, and they should not be resorted to in weakly persons and young children. (*The Liverpool Med. and Surg. Reports*, Oct. 1870.)

Mercury employed Hypodermically in the Treatment of Syphilis.—The memoir that obtained the gold medal in 1868, at the medical congress at Brussels, by MM. Scarenzio and Ricordi, has been translated into French by M. Oscar Max-Van Mons, and from it we learn that these gentlemen have injected calomel suspended in solution of gum-arabic instead of corrosive sublimate (the plan adopted by Lewin and others) with great advantage. They use a Pravaz' syringe, and prefer the outer part of the fore-arm or leg, or the lateral portions of the chest. On the third day a small abscess forms at the point of injection, which speedily bursts, or may be opened by the lancet, and rarely contains more than a drachm and a half or two drachms of matter. They strongly recommend the adoption of this plan of treatment in all cases of syphilis, but especially in that disease when occurring in infants, pregnant women, and those who cannot take mercury by the mouth, or in whom it cannot be employed by friction. They conclude by stating they consider it to be one of the most precious acquisitions of modern therapeutics. (*Journal de Médecine*, September 1870.)

A Plan for reducing Dislocation of the Shoulder.—Mr. Lowe gives the details of several cases of dislocation of the humerus into the axilla, in which the following plan of treatment was adopted with success. The patient is to be placed in a sitting posture upon the floor with his back to the side of a sofa. The wrist is then to be grasped and the arm raised perpendicularly, whilst the shoulder is fixed with the foot—of course without the boot. The following is one of his cases:—A gentleman crossing the old Burton bridge drove against one of the guard-stones, was thrown out of his gig, and falling upon his right hand, dislocated his right shoulder very low down into

the axilla. A surgeon passing at the time employed the usual means to reduce the dislocation, but without success. He sent for Mr. Lowe to give chloroform, but permitted him first to try his method. Seating the patient, a very heavy and bulky man upwards of sixty years of age, upon the floor, Mr. Lowe raised the arm and proceeded to make extension from the wrist, when he vehemently complained of pain in the wrist. It was then found that he had severely sprained that joint; on this, a roller-towel was attached to the arm above the elbow, and over a wet bandage extension was then made upwards, the foot being used to fix the shoulder. As the bone did not very readily return into its place a bystander was asked to give a pull too, which being done, the reduction was accomplished at once. (*St. Bartholomew's Hospital Reports*, Oct. 1870.)

Application of Carbolic Acid to Wounds and Ulcers by means of the Spray Apparatus.—Proceeding on the assumption that the action of remedial agents on open wounds is intense in proportion to the precision with which they are brought into contact with the several tissues, Ehrle has for some time past applied carbolic acid in the form of spray. The instrument he employs appears to be identical with that in common use for the diffusion of perfumes. The following is one of the cases under his treatment:—A woman, aged 65 years, had a medullary tumour of the size of the head of a child, the surface of which had become ulcerated. Extirpation was not admissible, on account of the rapid growth of the tumour and the cachexia present. The surface of the tumour exhibited a rapid disintegration of tissue, gave off an unpleasant odour, and was extremely painful and tender, the patient objecting even to the application of charpie dipped in an indifferent fluid. M. Ehrle employed solutions of 20 to 60 grains of carbolic acid in water, in the form of spray. The disease at once began to progress more slowly, and the ill odour diminished. Another case was that of a woman suffering from a fibroma of the cervix uteri, of the size of a goose's egg; it was removed by the application of the ligature. After a few days an ill-smelling discharge took place, stabbing pain was experienced, a cauliflower excrescence grew forth, all which symptoms rapidly disappeared after the spray of solution of carbolic acid had been for some time applied daily. (*Centralblatt f. d. Med. Wiss.* No. 44, 1870.)

Treatment of Sweating of the Hands and Feet.—M. Devergie remarks that this affection occurs not only amongst those who are negligent, but in those who are most observant of cleanliness. It often causes the sufferers from it to isolate themselves from company, a mode of life which exerts a

pernicious influence on the morals of the patient, leading to acts of insanity and even suicide, of which he gives an instance that occurred under his own observation. Sweating of the hands is often associated with phthisis. The question arises, Is it prudent to put a stop to these perspirations? Their arrest may induce a state of languor that nothing will overcome, anæmia becomes apparent, menstruation ceases, and months or perhaps a year is required to re-establish health and strength. The proper treatment is to employ inoffensive means, by which the perspiration may be diminished without being altogether arrested, and amongst them pulverulent remedies succeed better than unctuous applications or fluids, though the use of the latter should not be altogether neglected. The best baths consist of a strong solution (1 to 30 or 40 of water) of common salt, carbolic acid (1 to 500 or 800 of water), and permanganate of potash (1 to 50 or 100 of water). These liquids are at once solvent and disinfectant. They should be used in the morning and cold, rather than in the evening, when the skin is irritable, and hot with enclosure in shoes or boots. After the feet have been carefully dried a powder may be used. This, however, should not consist of the red oxide and sub-acetate of lead of M. Gassard, since this is too active; and the same may be said of those into the composition of which corrosive sublimate enters. The application of pure tannin is much superior in its effects, though sometimes it is somewhat too active, rendering the skin too hard, whilst it does not possess any disinfectant property. Coltar is also very valuable, and may be conveniently mingled with starch in various proportions. The powder should be applied with a powder-puff. The shoes should be very light, so as to confine the foot as little as possible. (*Journal de Médecine*, 1870, vol. li. p. 163.)

Notes and Queries.

DEPARTMENT OF NEW INVENTIONS.

We have received several letters from practitioners and others, requesting us to extend our analyses of commercial specimens of citrate of iron and quinine. We have therefore caused four samples to be taken from four of the most eminent manufacturers in London. The present paper must be read as a continuation of the one in the October *Practitioner*.

CITRATE OF IRON AND QUININE.

No. VII. Howards and Sons (late Howards and Kent), Stratford.—Dark olive green scales.

No. VIII. Herrings and Co., 40, Aldersgate Street, London. —Dark olive green scales.

No. IX. Morson and Son, Southampton Row, London.— Pale yellowish-green scales.

No. X. Hopkins and Williams, 5, New Cavendish Street, Portland Place.—Dark olive-green scales.

	Ferric Oxide.	Quinine.
No. VII.	20·7 per cent.	16·4 per cent.
No. VIII.	19·7 ,,	10·2 ,,
No IX.	22·6 ,,	9·8 ,,
No. X.	33·0 ,,	10·3 ,,

CORRESPONDENCE.

Is Croup communicable?—Dr. Vesey, Rosedrevor, County Down, sends us this note :—"Since July 1866, 18 cases of croup have come under my care; one case only was fatal. Twice during that time I have met with cases which appear to show that croup may be communicable. I shall briefly relate them. In November 1866 I saw a little girl, aged 1½ years, at 10 P.M. She had croup in a severe form. The urgent symptoms yielded to treatment, and at 5 A.M. I left my patient almost free from the metallic ring of the disease. However, in a few minutes, I heard a very loud cough, and thought that my little patient had

relapsed. It was her sister, who now had croup even more severely than the first case. Both had occupied the same nursery, and were only separated on my arrival at the house. In January 1870, a little boy, aged 7 months, was seized with his second attack. Two days subsequently his sister had a more urgent form of croup. Both were in the same nursery, which is a large, well-ventilated one. I have frequently asked my brother practitioners if they have had any similar cases, and invariably have had a negative answer. Can any of your readers throw any light on the subject by relating similar cases?"

Salts of Potash in Uric Acid Diathesis.—Dr. D. Campbell Black sends us the following:—"The November number of your journal contains an article by Dr. Basham, 'On the Therapeutic Value of some Salts of Potash in Renal Calculus,' &c., in which the following paragraph occurs: 'The result of these researches induces me to assume that the therapeutic or remedial action of these alkaline salts in the urid acid diathesis is capable of a different interpretation to that which has been hitherto offered; and I also venture to think that the value and usefulness of these saline remedies may be extended to a great variety of disorders, which, however different in name, have yet but one pathological source—the retention in the organism of one of the products of nitrogenous metamorphosis, which, while retained, seems capable of disturbing, according to the peculiar organization of the individual, almost every organ and texture of the body.' A short time ago you did me the honour to review in your columns my pamphlet 'On Therapeutics and Disease.' I ask you to refer to that pamphlet, and I think you will agree with me that in his interpretation of the beneficial effects of alkaline remedies in the uric acid diathesis, Dr. Basham has been clearly anticipated by me. I do not doubt that Dr. Basham has arrived at his conclusions quite independently of my pamphlet. I have written to that gentleman on the subject, and I have no doubt that he will accord me the priority in this question, which, so far as I can see, is clearly my due. In very many of Dr. Basham's remarks the concurrence of his opinions with mine is very striking; but I shall not occupy your space with further allusion to the subject in the meantime."

Castration in Epilepsy.—Dr. G. Mackenzie Bacon writes thus:—"Castration is for obvious reasons so seldom performed, except in cases of local disease, that one may be excused reverting to an instance in which this operation was carried out for other reasons. In remarking, in the *Practitioner* for June 1869, on the influence of the sexual passion as a cause of epilepsy, I mentioned a case in which I had removed both testes from a lad, believing that his fits were in great measure kept up by

sexual excitement. Nearly two years have passed since this was done, and I think we may, after this lapse of time, speak with some certainty as to the result.

"Before the operation the patient had a great number of fits, and was seldom more than two or three days without a series of them. The following is a list of the fits he has had since:—

Jan.	1869	3	fits	Dec.	1869	2	fits
Feb.	„	2	„	Jan.	1870	0	„
March	„	1	„	Feb.	„	2	„
April	„	2	„	March	„	0	„
May	„	4	„	April	„	1	„
June	„	0	„	May	„	2	„
July	„	0	„	June	„	2	„
Aug.	„	3	„	July	„	0	„
Sept.	„	4	„	Aug.	„	2	„
Oct.	„	1	„	Sept.	„	4	„
Nov.	„	1	„	Oct.	„	0	„

"It appears from the above that the fits have been greatly diminished in frequency by the operation, and the general condition of the patient has also much improved. His intelligence has increased; he is lively and better behaved, and able to be employed usefully. He is probably now as well as his mental condition will ever permit him to be, and I think no one can refuse the conclusion that he has benefited by what has been done for him. I am well aware that such a step cannot often be taken; but with such proof as this before us, I think it deserves the consideration of medical men whether such an operation might not be recommended in certain cases. The misery produced in families and to parents by the presence of many cases of epilepsy with bad habits and tempers and increasing loss of mental power, progressing slowly but surely to complete dementia, may well justify any plan of relief that does not threaten life. To my mind it seems almost a duty to advise it in many cases, if only to abate the moral evils that arise. I do not, of course, urge it indiscriminately; but it could hardly be objected to on any reasonable ground in cases of idiocy or imbecility, nor in cases where epilepsy is of long standing, and is not benefited by drugs, and where it is plain that masturbation is concerned in the frequent repetition of the fits.

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[1] Any of the foreign works may be procured by application to Williams and Norgate, of Henrietta Street, Covent Garden, W.C.; or Messrs. Dulau, of Soho Square, W.C.

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